

CLASSIC REPRINT SERIES

EXERCISING IN BED

The Story of an Old Body and
Face Made Young



by
Sanford Bennett

Forgotten Books



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and Face Made Young

by

Sanford Bennett

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“In changing the base metals into gold and silver by the projection of the Stone, it follows (by an accelerated process) the method of nature, and therefore is natural.”

The New Pearl of Great Price, by Peter Bonus, 1338 AD

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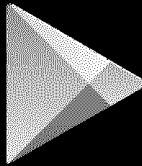
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All muscles and all organs increase in size, strength and elasticity when properly exercised. This is the secret of health, strength, elasticity of body, and a long life.

Exercising in Bed

**The Story of an Old Body
and Face Made Young**

**The simplest and most effective
system of exercise
ever devised**

By SANFORD BENNETT

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**The Physical Culture Publishing Co.
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¶ To my friend, and companion on many a shooting trip—the happiest days of my long life! Together we have climbed the steep quail hills, or waited listening in some rocky canyon to the deep, vibrant bay of PEAK mingling with the long-drawn bugle-like cry of SCOUT, as, through tangled chapparal, they “cold trailed” some wandering coyote or sneaking cat; the sharp, high staccato notes of NELLIE would break in, and the duet became a trio. Then, as the tempo of the wild symphony quickened, we scrambled up the rocky ridge to our stand on the “high divide.”

¶ Together we have “lain out” in our blankets watching the glint of the stars in the cloudless California sky; while, far up on the mountain side, the thin, weird wail of some

prowling coyote alone broke the silence. Then, as the crest of Grizzly Peak reddened in the rising sun, the reedy, querulous challenge of the ccck quail sounded defiance from sheltering thickets, far and near. The wind, sighing through the redwoods—the pungent smoke of the camp-fire—the pure, clear air of the early morning;—the joy of it all when one is pulsating with health and lives close to Nature.

¶ The picture changes: a bevy of quail is scattered over the brown, dry hillside. SHOT and DAN cautiously beat the short sagebrush cover. They stop, and stand like statues. I see the quiver of their tense muscles—the gleam of DAN'S bright brown eyes. A sharp whir, and the fastest game bird in the world darts like a flash down the gulch. The hammerless goes to my shoulder—the fleecy feathers drift upon the still air. The picture never fades, and years but add to my love of that life.

¶ Al Fischer, crack shot and companion on many a shooting trip on which we never found the country too rough, the hills too high, or the day too long, I dedicate this book to you, and may the years rest as lightly on your shoulders at seventy as they do on mine.

SANFORD BENNETT.

San Francisco, California, January 4th, 1910.

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Preface

The movements, or muscular contractions and alternate relaxations, described in this system of Physical Culture are not specially new, but my adaptation of those exercises, that they may be effectively and systematically practiced under the most comfortable conditions possible (that is, while lying in bed) is, to the best of my knowledge, a novel idea and a step in advance in the most important of all sciences, the science of health, strength, elasticity of body, and longevity.

The ease with which the exercises can be performed under these conditions, the small expense of the four simple aids or devices which I use, and the robust health, vital energy, and muscular development which I have obtained at an age when such conditions are very unusual, will commend themselves and invite, at least, a trial. But that trial must be something more than a spasmodic effort made once or twice a week.

To effect any material improvement, determine upon an hour in the early morning when you will

commence practice, the number of minutes you will devote to it, and then "stick to it," daily, systematically, regularly, until it becomes a habit; then you will go through the exercises without any conscious effort of the mind, as habit rules our lives, and such a habit will surely bring to you health, strength, and elasticity of body; will increase your vitality and prolong your life.

Sanford Bennett.

Preface to Revised 2nd Edition

The essays upon the science of Physical Rejuvenation in advanced years embodied in this book originally appeared weekly in Sunday editions of the San Francisco *Chronicle* during the years 1906 and 1907. They created a great deal of interest in this city where in the past 40 years I have grown old, then reversing the usual conditions I have grown young again.

I was unable to answer the great number of letters addressed to me, and to respond to those inquiries satisfactorily the essays were placed in book form, an edition of 2,000 being issued. This was speedily exhausted; but the growing interest made a new edition imperative, and in response to that demand I present this second venture in the literary field. The matter presented in the First Edition as well as the title "Exercising in Bed" is retained, but a great deal of new data is added which will be of interest to those experimenting in the art of physical improvement. All new

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matter in this edition is paged in Roman numerals, the paging of the original text being left unchanged.

A large number of letters have been received from ladies asking advice as to methods of rejuvenating the face and throat. The information requested will be found in the added chapters upon that subject. The several new exercises I have devised are illustrated and described, and all of the exercises to the number of thirty are presented in the form of a chart inserted as a folder in the back of the book. These exercises are placed in the order which I have found most convenient for practice. Mechanical devices I no longer use, as I have found they are not absolutely necessary for physical development; but as many people insist upon them, and as they appeared in my first work upon this subject, they are therefore included in this edition. The directions and illustrations for these muscular contractions and relaxations are simple and easily understood, and you will not need an instructor.

As to my own success in the art of Physical Rejuvenation in advanced age, I refer you to

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the photograph which has been selected as the frontispiece of this edition. This photograph was taken upon my seventieth birthday. Compare it with the picture facing it which was taken at the age of fifty years; you will then appreciate the possibilities of the system of Physical Rejuvenation described in these pages.

I have nothing to sell, and can give no personal instruction, but feel sure that what I have done you can do. I "practice what I preach," have made a success of it in my own person, and so will you if you will carry out my directions. The chapter following upon the Power of the Will in exercise is of the most vital importance. Read it carefully if health is your quest. You will there find the key note of this or any other system of exercise.

Answering many inquiries regarding my diet, I am happy to say that at 70 I have "the appetite and digestion of a lumberman." As for thirty years I was a hopeless dyspeptic, my recovery from that infernal malady may interest other sufferers. The secret is this: chew your food thoroughly, reducing it to a

Exercising in Bed

pulp before it is swallowed. If this is done, digestion is easy; if neglected, the process of assimilation is made difficult and sometimes impossible. You will find the scientific reasons in Horace Fletcher's "Epicure or Glutton," and as anything I could say would be but a repetition of Mr. Fletcher's sensible advice, the only improvement I can suggest is to strengthen the abdominal muscles. This can easily be accomplished by practicing the exercises devised for that purpose. You will find them illustrated and described in this Edition. Follow these suggestions and the question of diet and digestion will not trouble you.

The chapters upon the rejuvenation or preservation of the appearance of youth in the face, throat and neck may appear superfluous to those who consider the matter here presented solely from a hygienic point of view, but they will most probably be of interest to all women, for in the exercises and methods described lie the secret of the remarkable physical preservation of Ninon de L'Enclos (the wonderful French beauty, "the woman who never grew old").

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To a wage earner they may also commend themselves, as it is an unfortunate fact that the appearance of facial age is a detriment and lessens your value. Therefore look young. It may require some time and exertion, but it will pay you. To all men and women I present in this system of exercising a method which will surely prolong your life, and it has this merit: it requires no financial expenditure. The matter lies wholly with yourself.

THINGS TO BE REMEMBERED

All of these exercises are performed in bed under cover of the bed-clothes.

Commence the exercises as soon as you are awake.

Count the movements; this concentrates your attention and growth is then more rapid.

During these exercises frequently take deep breaths.

Keep your windows open both top and bottom.

Breathe through the nose—not the mouth.

Take a tepid plunge bath every morning after exercising; in and out quick.

Learn and practice each exercise before taking up a new one.

Copious water drinking, and especially a glass about fifteen minutes before breakfast, is a remedy for constipation.

Digestion is retarded and digestive organs impaired if you hurry at your meals. Eat slowly and masticate your food thoroughly.

Attend to the calls of Nature promptly.

The chapter upon internal cleanliness, page 249, is important; study it and learn why—it may save your life.

Keep in the sunlight as much as possible.

If you think you are threatened with appendicitis, wash out the lower bowel, the colon (see page 249), and starve—it is more effective than an operation and cheaper.

Clinical Report

By Dr. Carl Renz
966 Sutter Street, San Francisco

Mr. Sanford Bennett, the author of this book, has been the subject of frequent professional examinations during the past eleven years, or, as shown by my office records, first examination made by me February 5, 1895.

When commencing these periodical examinations, he requested that I should keep a careful record of any changes in his physical condition which I might detect, explaining that he had devised a system of muscular contractions and alternate relaxations, which he practiced as he lay in bed, and which he believed would eliminate the worn-out or dead and clogging cellular tissue, hoping that in this way he could rejuvenate his body, which at that period exhibited the conditions usual after the fiftieth year has been passed. His general appearance was that of a man whose vocation had neces-

sitated an indoor life. The outlines of his first record are:

Height, 5 feet 6 inches.

Weight, 136 pounds.

Abdomen, with decided ebonpoint.

Skin, sallow.

Varicose Vein on inside of right leg (uses an elastic stocking).

Neck, 14 inches.

Skin, around throat, hanging loose.

Legs, well developed.

Arm Muscles, atrophied and flabby from lack of exercise.

Forehead, deeply lined.

Hair, thin, dark, streaked with gray on crown; quite bald.

Chest Expansion, 3 inches; symptoms of Arteriosclerosis slightly developed.

Hearing and eyesight, good.

Size of Liver, normal.

Heart, normal dimensions; no valvular lesion.

Pulse, about 76; not quite regular.

Lungs, normal.

Complains of Chronic Dyspepsia; is distressed after meals; biliousness; heart palpitations.

Temperament, very nervous.

Urine, without sugar or albumen; of high specific gravity; at times containing uric acid, at others, phosphates.

General physical conditions, poor.

Appearance, that of a man who had devoted much attention to his business, to the neglect of his health.

Clinical Examination April 1, 1906

Or after a lapse of eleven years from first examination

At this date I find a great change in the condition of the muscles, organs, skin, hair, and general health of the subject, who really seems to be rejuvenated.

The hair, now gray, has become quite luxuriant. No indications of former baldness.

The neck, increased to 15 inches, smooth and very muscular; in appearance, the neck of a young man.

Throat, full.

Skin at this point no longer loose and hanging, but firm.

Chin and cheeks, round.

Face, smooth; color, excellent. Appearance of the face is that of a healthy, well preserved man of forty or less. The lines which formerly existed have disappeared.

The development of the arms, chest, back, shoulders, and abdominal muscles creditable for an athlete of thirty.

Heart, sound; no palpitation or irregularity of pulse.

Chest expansion $5\frac{1}{4}$ inches.

Waist, 28 inches. No fat around the abdomen; digestion good.

There is a remarkable preservation of tissue integrity and functional activity; the subject has now entered his 66th year, and has all of the elasticity and appearance of a young man.

Under these favorable physical conditions it would be pure speculation to hazard an opinion as to the probable future span of life. The record of my examinations shows a steady improvement of the subject at an age when such improvement is very unusual; this condition seeming to be due solely to the systematic method of muscular contractions and alternate relaxations which he daily practices.

The success, which Mr. Bennett has obtained would seem to be a practical verification of the truth of his theory, "that the secret of health, longevity, and elasticity of the body lies solely in the elimination of dead and worn out cellular tissue, which if allowed to remain in the system would impede the functions and shorten life; and that the only method by which this dead cellular matter can be eliminated is by muscular activity."

Exercising in Bed

I.

The Whys and Wherefores

In all ages mankind has endeavored to restore to the aged human body the freshness and elasticity of youth. In olden times these efforts were largely made in the direction of incantations, charms, spells, and even sacrifices of human beings.

Millions of victims have undoubtedly been murdered in the vain hope of obtaining from those victims the life principle, believing that it could be transferred to rejuvenate some aged body.

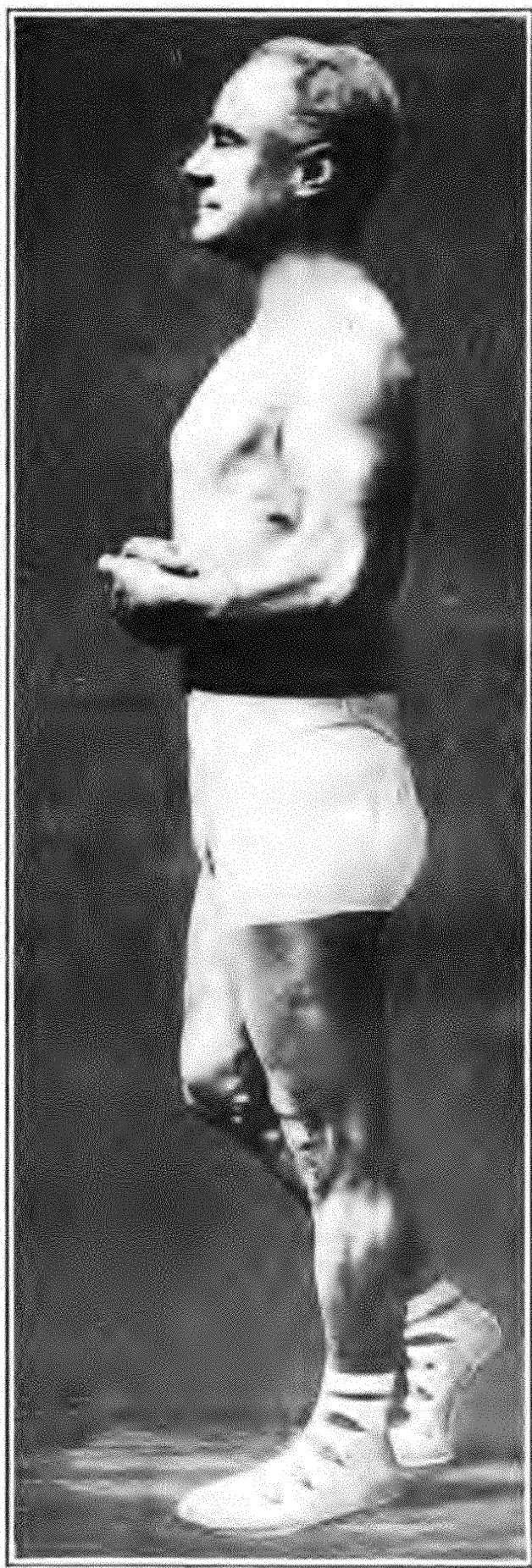
In the course of my investigations and readings upon this subject, during the past sixteen years, I stumbled across an old work giving an account of the various methods practiced in this direction. Some of these remedies were very laughable;—as pills made from the stomach of a toad killed at some particular phase of the moon were es-

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teemed of great value, as an aid to longevity. But human sacrifices seem to have been always a favorite method. They were very credulous people in those olden days. Now we are wiser and of course less credulous. We pin our faith to patent medicines, believing in their virtues, and in the miraculous cures and wonderful properties loudly heralded by their advertisements, just as the people of former days believed in the abracadabra incantations of their magicians, pills from a toad's stomach, etc.

It is all very illogical: as, if it were possible to purchase health, strength, elasticity, longevity, and the freshness of youth, then the financially richest man would be most generously endowed with these, the real, the greatest natural riches in the world (by reason, of course, of his purchasing power); and the position of drug clerks who had these remedies for sale, would go to a premium, as they would have at their elbow cures for all the evils that flesh is heir to, and, presumably, at cost prices.

If any one of the thousands of hair restorers advertised would perform what is claimed for it in the advertisements, the baldest and richest millionaire in the United States would have a



Side View, Showing General Development at Age 70

Exercising in Bed

head of hair that would make the spirit of Absalom turn green with envy.

We are a credulous people; credulous as they were in the days of the magicians who practiced the black art, sacrificing human beings in the vain hope of rejuvenating the aged human body, and believing implicitly in the virtues of pills made from a toad's stomach.

We laugh at Ponce de Leon's expedition to Florida, where he hoped to find the fountain of youth in that land of perennial vegetation. We laugh at his foolish expedition, and then go to the nearest drug store and buy Professor Whangdoodle's or some other humbug's elixir, goat lymph, or some decoction of equal value to the delectable pills aforementioned. It is nonsense. You can't rejuvenate the old human body by any medicine, elixir, food, or liquid that you may buy.

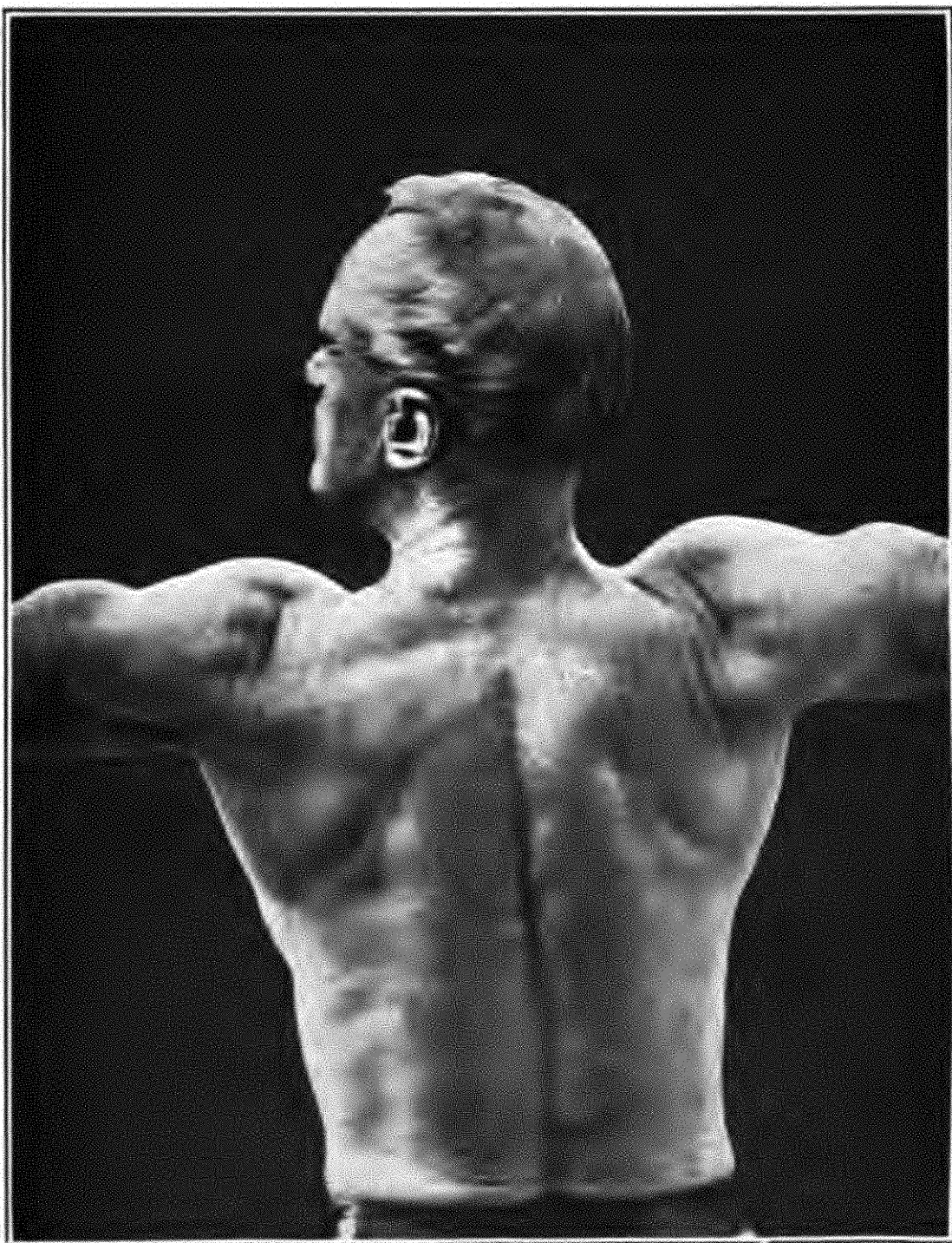
The question at once arises; Is it, then, possible to rejuvenate, to any considerable extent, the human body after it has passed, say, the half century limit? Unhesitatingly, and from my own experience, I answer "Yes"; and I do not ask acceptance of my statements as to that possibility without proof.

I therefore submit the series of photographs

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which illustrate this book, showing my present physical condition at the age of 70. I commenced my studies and experiments in this process of rejuvenation when I was entering my 50th year; at that age, I was physically an old man and looked my age, as will be shown by the old photograph, facing page 26.

I am now a younger man physically, and in appearance, than I was when that picture was taken. I find, in speaking of this matter to various interested parties, that they usually refuse to believe that I am as old as I claim to be. There is little difficulty in establishing the fact that I was born in Philadelphia, January 4th, 1841, and therefore have entered my 70th year. The next objection is, that I am abnormally endowed with the vital principle. This is a mistake. My father died of consumption at the age of forty-two, and I inherited that tendency. My family, upon both my father's and mother's side, were not long lived, and my physical start in life was as a nervous, anaemic, frail shred of a child, whom no one expected ever to reach maturity. That frail child grew into a slender, nervous, dyspeptic man, and chose the very worst profession in the world for such a physical condition. I became an office



Development of Shoulders and Arms at Age 70

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man, and the sedentary life of that profession exaggerated a tendency to dyspepsia and its attendant maladies. I became partially bald, was rheumatic, and continually afflicted with minor ailments. It was this unfortunate condition, which impelled me to commence systematically the studies and experiments which have resulted so fortunately for me.

The photograph which faces the 26th page of this book was taken June 4th, 1889, a companion to the one taken February 15th, 1906, appearing on the opposite page, showing accurately the marked improvement in the face and hair. The rest of the photographs were taken during February, 1906, and the spring of 1907. They are truthful illustrations of my present physical condition. It is unfortunate that I did not preserve any photographs of my physical condition when I commenced to practice the system of exercises described in this book; but I never expected to succeed as I have done. The only photograph taken in the earlier years of my experiments faces page 66. After practicing the exercises nearly five years the muscular development shown in this illustration is not very pronounced, but is a great

Exercising in Bed

improvement over the physical condition I was in when I commenced.

These pictures are not exhibited as showing any unusual muscular development, nor are they intended for comparison with the physical condition of any youthful athlete, but are presented as specimens of what may be accomplished in the development of an aged body, which, in my case, has been rejuvenated to a very large extent, and this at the age of 67, or 7 years beyond the chloroform limit suggested by Dr. Osler. Regarding that gentleman's statements, I would say that it is my opinion they were based on his own physical condition; and if that is the case I, of course, most heartily agree with him, at least as far as he is concerned, not wishing to disagree with such an eminent scientist. The answer to his statement is that physical age does not depend so much upon the number of years you have spent upon this earth as it does upon how you have taken care of your machinery. Through lack of knowledge, lack of exercise, and violations of the laws of health, it is possible to be physically an old, worn-out man at forty, and a subject for chloroform as the learned Doctor hints at sixty; but, upon the other hand, if the body is kept clear of clogging,



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worn-out matter, by the simple system described in this book, the walls of the arterial and venous system may remain elastic, and the body at 70 present the appearance of the average athlete of half that age. This much I have demonstrated: What the limit of that condition is I do not know; but at present the most searching investigation of an experienced surgeon does not disclose any sign of physical deterioration. I refer to the report of Dr. Carl Renz, in the first pages of this book.

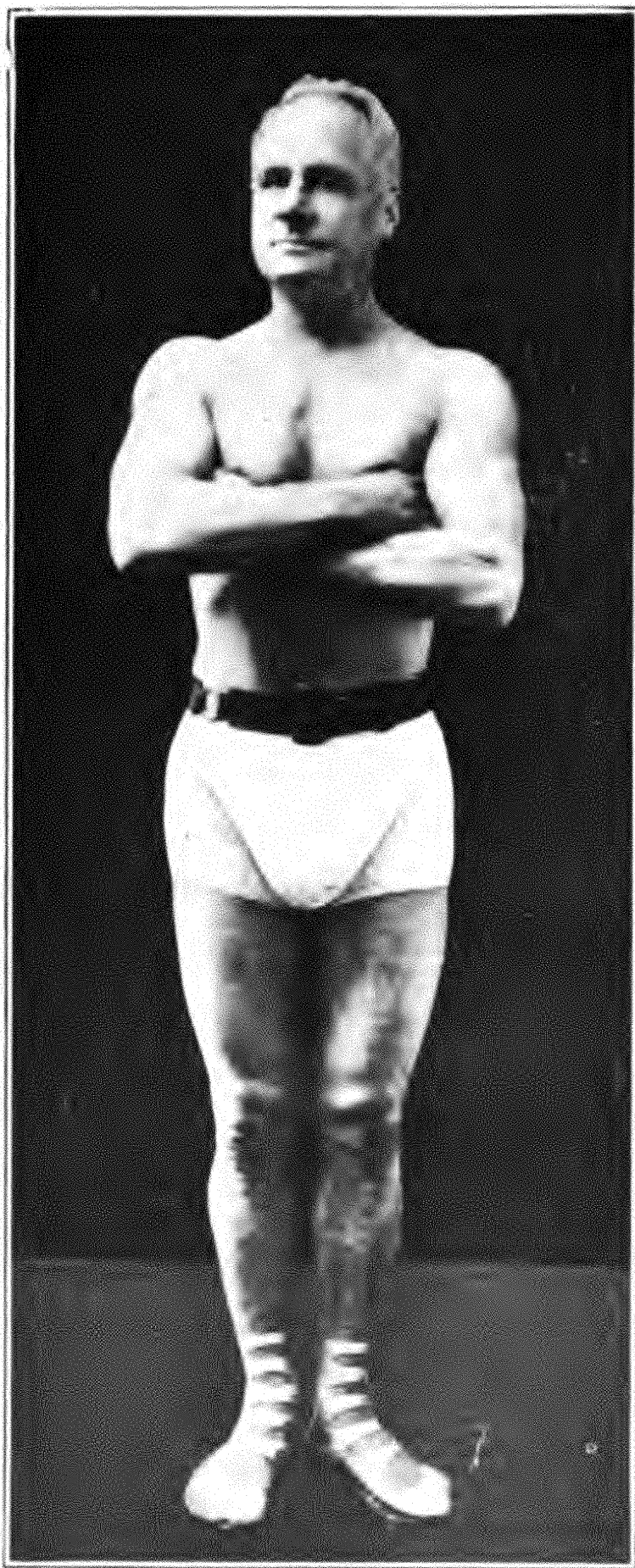
In my college days I was acquainted with an old trainer of athletes who used to say to us, "Gentlemen, a man is as old as his arteries". I think that was the extent of his knowledge of the physiology or the anatomy of the human body, as he told me in confidence one day that "biled cabbage was bad for men in trainin', as it got mixed up with their heart and their other works". From my own experience I agree with him as to the effects of biled cabbage on my "other works"; and he had, undoubtedly, condensed a great deal of wisdom in his statement, "a man is really as old as his arteries", for upon the arterial system, from the largest artery to the smallest capillary, a man's physical condition depends. It is evident that the arterial system, or in other words, the

Exercising in Bed

plumbing and piping of the human body, must be kept free from all clogging matter. For if this is not done, the muscles and organs are not properly supplied with blood and material for repairs, and will consequently deteriorate and show indications of what we know as age. Such a body could not be healthy or elastic; it would practically be an old body, and the man or woman in such a condition would be aged, even though his or her years were in number those of youth. On the other hand if the arterial and venous system can be kept clear of such deposits, the walls will remain in the elastic condition characteristic of youth, the heart will pump the blood through those elastic arteries without difficulty, the muscles and organs, being properly nourished, will retain their vigor, and the body present the appearance of youth at an advanced age.

The process of cleansing these arteries, whether the largest artery or the most microscopic capillary, can only be accomplished through the alternate contraction and relaxation of the muscles, that being nature's method of cleansing the body of impurities. It cannot be accomplished by any other means.

To understand how the arterial and venous sys-



Front View, Showing General Development at Age 7

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tems become obstructed with waste or dead matter, it is necessary to have a slight knowledge of physiology, and I will ask you to recall your first lessons in school upon this subject. The human body is composed of billions of cells, or molecules, I prefer the latter term, Webster's definition being "a minute particle"; and these billions of minute particles in aggregate form our bodies. They come into being from the liquid we drink, the air we breathe, and the food we take into the stomach, these materials being converted, by the marvelous process of digestion and assimilation, into cellular, or molecular, life.

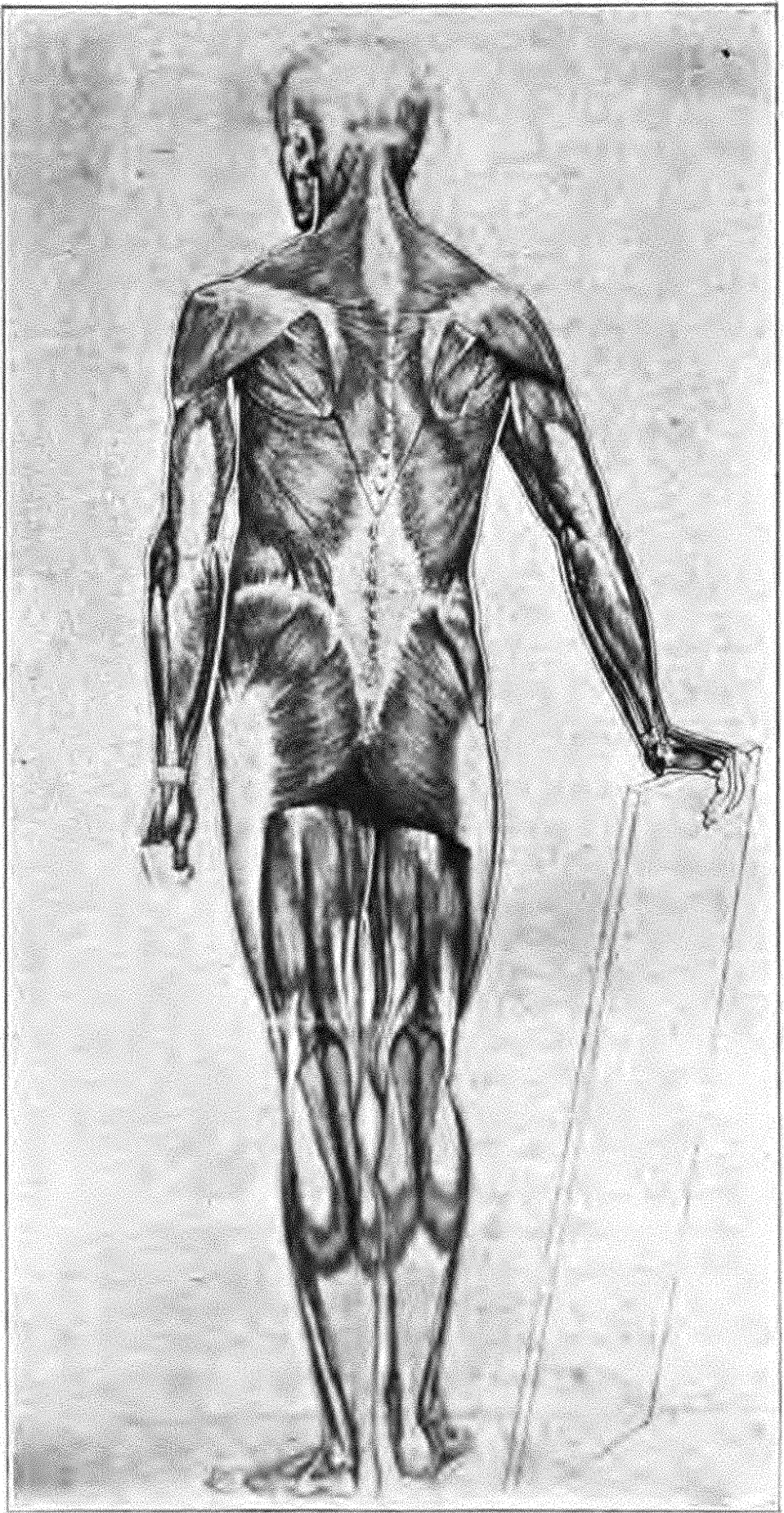
Each infinitesimal cell has a life of its own, as distinct from the cells or molecules surrounding it as each person is distinct from all others. They come into being, live their brief life, and then die, even as you and I die; and, having become dead matter, should be thrown out of the system. Otherwise they will clog up the arterial, or piping, system of the body. Thus it is easily seen how important it is to free the system of worn-out dead matter; and this cannot be accomplished, and never has been accomplished, by any lymph, serum, elixir, or medicine yet brought before the world. I repeat my assertion that the only process

Exercising in Bed

by which it can be done is nature's method, that is, the alternate contraction and relaxation of the muscles; in other words—exercise. In the almost unceasing activity of childhood and early youth we see the manifestation of this plan of removing impurities and dead matter from our bodies.

You can also see the fallacy of the theory of another scientist who created a sensation almost equal to that of Dr. Osler's, by stating, in a widely circulated article, that it was injurious to actively exercise after the age of thirty-five. That gentleman's statement, like Dr. Osler's, was probably based upon a life of mental activity and physical inactivity; result—an old body.

Nature's law is this: All muscles, all organs, grow in size, strength, and elasticity when they are properly and persistently exercised; and just as certainly all muscles and all organs of the human body lose these qualities if they are not exercised. It is nature's unalterable law. In short, the secret is exercise; exercise, persistent and methodical, from the time you toddle across the floor as an infant, until the shadow falls and the vital cord that connects you with the great reservoir of the life principle snaps, and you step into the mystery beyond.



Back View of the Muscles of the Human Body

Exercising in Bed

The most perfect man, possessed of the strongest body the world has ever seen, will surely deteriorate if he does not exercise. This applies to every human being of either sex, of whatever age. There is no exception to the law; and if you would be healthy and prolong your stay upon this earth, you must work for it. There is no other successful method. Diet as you will, stuff yourself with health foods, saturate your system with the most widely advertised preparations for the attainment of health, strength, activity, and longevity, you will not succeed unless you keep the body clear of all dead and clogging matter; and this can only be accomplished through nature's method. There is no substitute.

For the encouragement of those who have reached or passed middle life and think they are too old, I would state that my experience has been that there is no period of life when improvement is impossible. In the cases of several aged people who have sought my advice and adopted my method a beneficial effect has invariably followed. As I have stated, I did not commence to exercise systematically, with the view of the development of the upper part of my body, until I had entered my 50th year; and you will

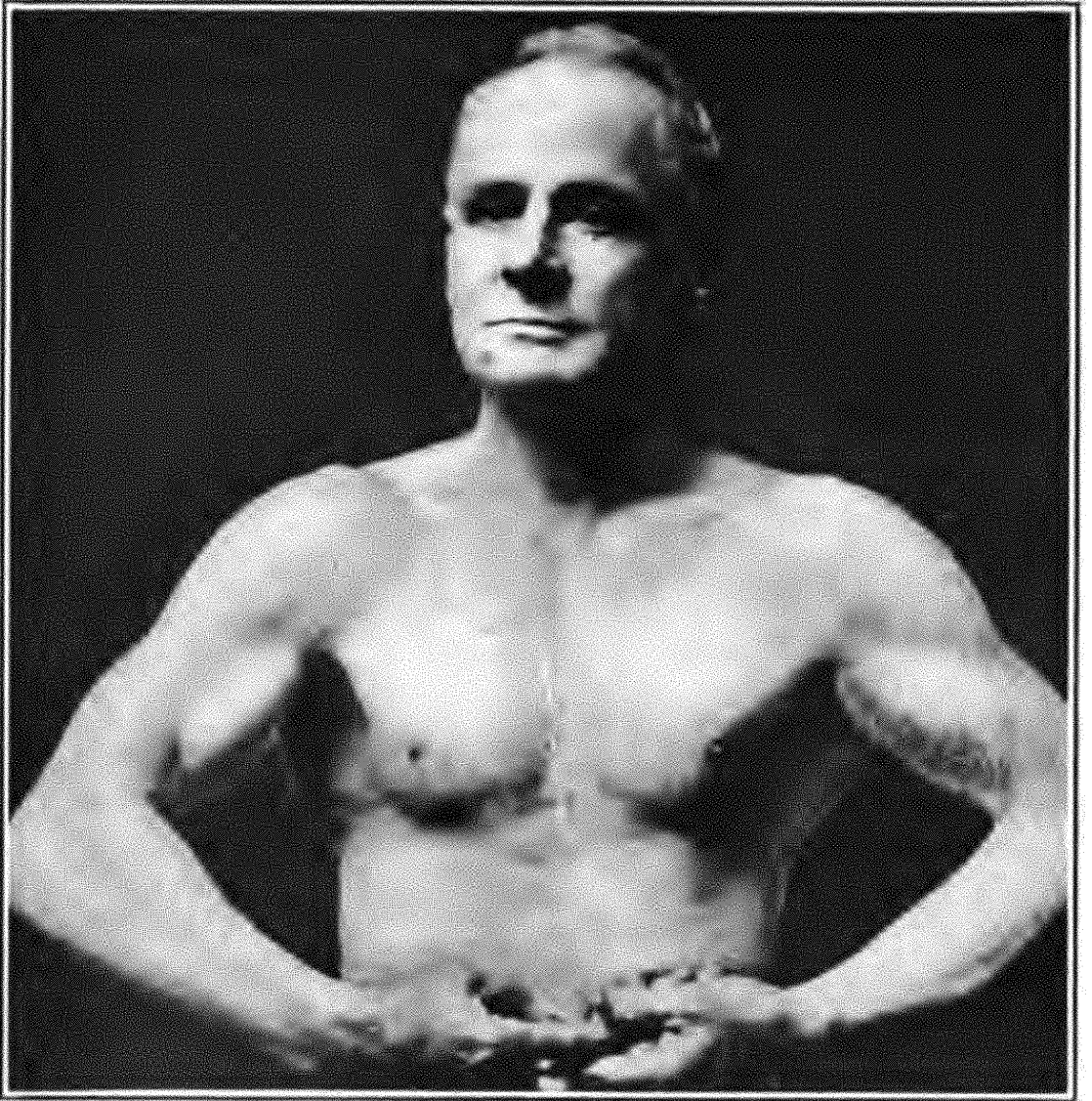
Exercising in Bed

surely succeed if you will follow my instructions and practice increasing your strength, elasticity of body, and length of life upon this earth. You will, most probably, succeed to an even greater extent, and far more rapidly, than I have done, for of the sixteen years that I have passed in experiments, a considerable number have been records of disheartening failures, caused by wrong methods. You will profit by those mistakes and my dearly purchased experience.

Bear this in mind—I emphasize it: all muscles and all organs grow in size, strength, and elasticity if properly exercised; and as surely will they lose those properties if they are not exercised.

You know the benefit of exercise; but the general impression is that it means joining a gymnasium, or performing a variety of violent motions at unpleasant hours, which, in time, become distasteful and are finally abandoned.

It certainly takes a great amount of courage to get up on a cold morning and go through a series of exercises which may be directed by a physical instructor or a book upon physical training; in fact, more moral courage than I possess. It occurred to me that as this alternate contraction and relaxation of the muscles must be about all



Showing Chest Development at Age 70

Exercising in Bed

that is necessary, the process could be gone through without mechanical appliances, even while lying in bed or in a recumbent position.

To test the theory, I invented a series of exercises of muscular contractions and relaxations, which I practice while I lie in bed in the morning. These movements were so designed as to exercise every part of the body, and I speedily found that equal benefit resulted as though they were practiced in an elaborate gymnasium and in athletic costume.

As the result of my theory and practice the photographs of my present physical condition will give a good idea of the success of my efforts. That success can be yours, if you will practice as I have done.

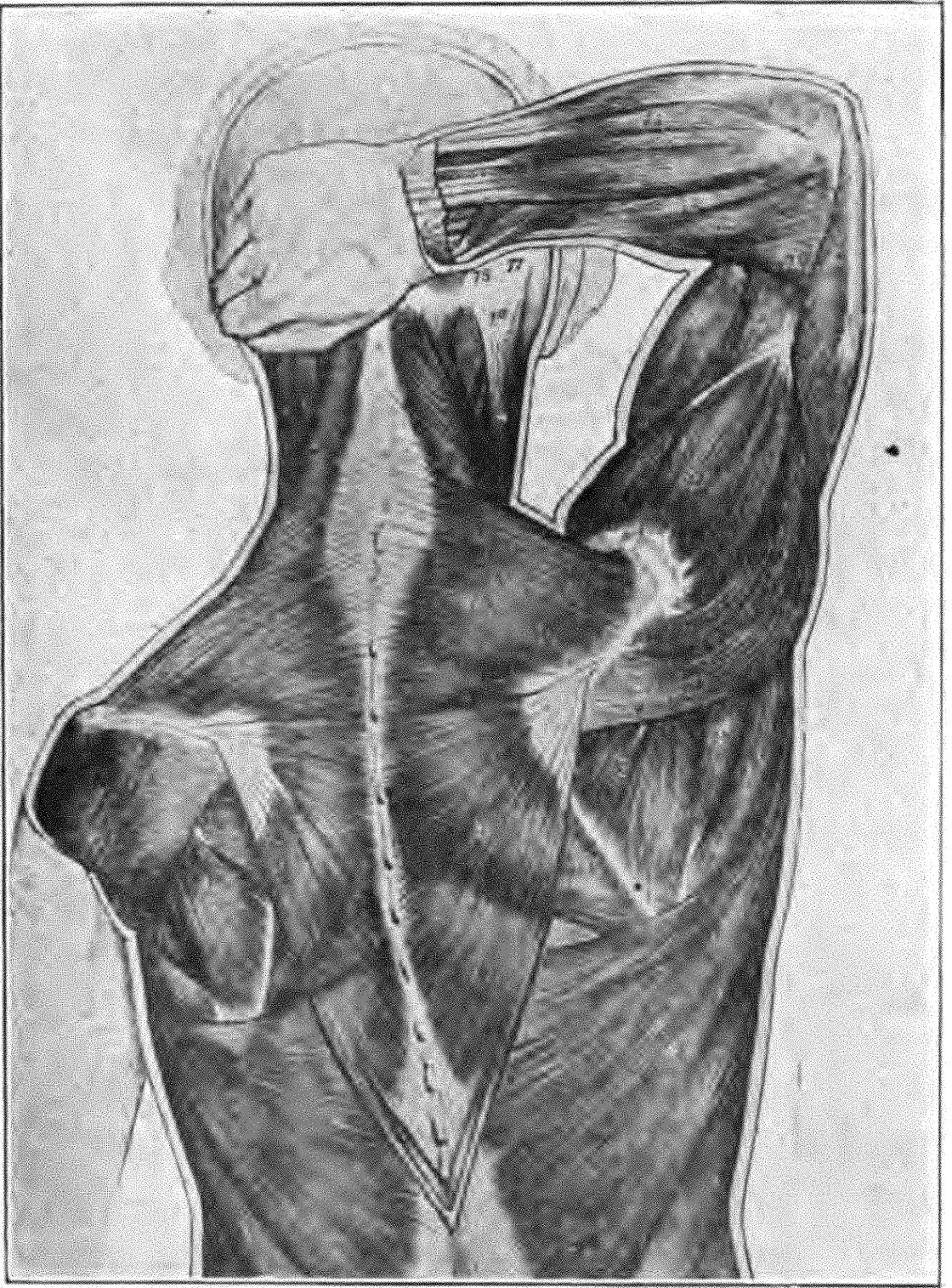
These rhythmical, muscular contractions and alternate relaxations really constitute a system of muscular pumping which not only eliminates from the parts of the body so treated dead cells, worn out tissue, or other clogging matter, but also accelerates the circulation and increases the supply of blood to those parts. And with that additional supply of blood there is an increase of that mystic power, the vital principle. Hence growth, practically a rejuvenation of the muscles.

Exercising in Bed

There is a strong sympathy between all parts of the body one with the other, and any organ, gland, or structure underlying or adjacent to the muscles exercised will be greatly benefited. I have repeatedly demonstrated the truth of this statement in my practice, and can confidently say that improvement is possible at any stage of life, at least up to the age of sixty-seven, for I find that at this period of my life development of the muscles is as readily accomplished by the methods I practice as it was when I first commenced, nearly seventeen years ago.

As all parts of the body can be improved by these exercises, it is evident that a general and systematic method of calling all the muscles into action will result in an absolute rejuvenation of the system; and this is the result I have accomplished in my own person.

The only mechanical appliances that I use are a pair of four-pound dumb-bells, and a board eighteen inches long by four inches broad, to which two short ropes, eighteen inches in length, are attached, terminating in ordinary pulley-weight handles. This appliance has the effect of a lifting machine in developing the loins and shoulders. It is so used, as I lie comfortably under



Showing Muscles of the Neck and Arms—Rear View

Exercising in Bed

the bed clothes. In fact, I perform all of these exercises as I lie thus at my ease.

There are many advantages in this method of exercising. In a recumbent position more muscles can be brought into action than when in an upright position; and I believe that muscles develop, provided the air breathed is pure, more rapidly under these comfortable conditions than in the cold, bracing air usually advocated for physical exercise. There is another advantage—the vital force which would be required to prop up your body, if you should exercise in a standing position, can be thrown into any muscle you may be endeavoring to develop (and it is possible to exercise every muscle of the body evenly) without any strain upon the heart. In this recumbent position no danger can result, while it is very possible to overtax this most important of all muscles in the gymnasium.

A regular hour of practice can be set and adhered to. This is very important, as improvement is much more rapid under such conditions than in the irregular manner in which exercise is usually taken; for nature cordially seconds your efforts when they are thus regularly and faithfully put forth.

Exercising in Bed

With these muscle-tensing exercises I have succeeded in developing evenly all the muscles of my body, in proof of which I refer you to the photographs exhibited. On the other hand, in the practice of a gymnasium one is very likely to develop one set of muscles and neglect others equally important, as a result of which the body gets out of balance, and, like any other badly balanced piece of machinery, is not capable of its full efficiency.

It is astonishing the number of exercises that are possible while lying comfortably in bed. Every muscle of the body can be called into action, until a healthy glow results from head to foot from the stimulated circulation, and you realize the full joy of living.

The objection usually raised, is lack of time. Under the usual conditions, possibly; but I take these exercises at a time when I am absolutely idle, and under very comfortable conditions. I wake up at about half-past five, and systematically go through the exercises until, say, half-past six. Then I rise and take a quick, tepid bath. Anyone can perform the exercises. They are simple and effective, and will surely bring to you the greatest riches of the world—health, strength, elasticity, and longevity.



Showing Muscles of the Upper Arm—Side View

The Will in Exercising

The effect of the will upon the body is very marked in these exercises. Each set of muscles being exercised by itself, there is a concentration of thought, or determination of will force, to that point and it would seem that the speedy and very remarkable muscular development often resulting from the practice of this muscle-tensing system is due as much to the will force concentrated upon the muscles placed in action as by the exercises. On first thought this statement may not find favor with the average reader, but when you consider some of the phenomena which are undoubtedly caused by the action of the will this theory of the cause of the rapid muscular growth is not illogical.

I quote at random from a number of medical authorities:

“By force of will the beating of the heart may become slower or quicker or may even cease under the stress of emotions such as anger or fear.”

Exercising in Bed

“A very great fright may even cause death or syncope.”

“Concentrated attention, that is, attention concentrated on any portion of our body, produces manifest changes there; thus, redness or paleness may be induced in the face or swellings on different parts of the body.”

“Certain monks are known to have induced the red marks of flagellation or the signs of Christ’s sufferings upon their bodies, and it is an established fact that by fixing the attention upon any part of the body positive pains may be produced.”

“Rage affects the salivary glands.”

“Fear disturbs the functions of the heart and anxiety the digestive organs.”

It is evident, therefore, in view of the phenomena instanced, that the will has much to do with the determination of our lives and our physical conformation, impressing our character and modes of thought upon our features, and in exercise, and especially in these muscle-tensing exercises, it is a very important factor in muscular development. The will also has a law in common with the muscular system, that is, it grows in strength when exercised.

Exercising in Bed

If things were always as hard to do as when tried for the first time we would never progress, but the way becomes easier as we continue our efforts and exercise the will, so that those who practice these exercises will find the desire to execute them grow, the difficulties first encountered disappear and finally that which was distasteful becomes an attractive habit.

Mentality has much to do with our health and the duration of our lives. A fixed determination to live will prolong life just as certainly as the feeling that we are growing old lessens our courage and hastens the end. If we lose faith in our strength it leaves us. If we believe that age is beginning to weigh heavily upon us we take to sedentary habits and little by little we lapse into sluggish lives, our blood is vitiated by idleness, our feebly renewed tissues and lowered vitality invite diseases which we know as the signs of age. We lose courage and faith in ourselves and then truly become old.

It is a worn but truthful adage that "everyone is as old as he thinks himself to be." If you think yourself aging, surely you will has-

Exercising in Bed

ten that condition and marks of physical decay appear which your years may not warrant. Moral: Don't admit to yourself, or to any other person, that you are growing old, and if you resolutely deny the approach of indications of age you will retard their appearance.

Remember this: When you think young and act young, people think you are a good deal younger than you are and finally you will come to believe it yourself. When you have reached that stage you will have the courage of your convictions and the battle is half won. You will have pride in your physical improvement and, fearing physical deterioration, you will try to keep trying and success will surely come to you.

An example of the power of the will over the body is found in faith cure, or Christian Science, as beyond all question great numbers of well authenticated cures of dangerous diseases have been effected, amply demonstrating its efficiency, but these cures are due to a settled conviction of the efficacy of the method and not to theology, being simply a demonstration of the power of the mind over the body and a verification of the statement that the

Exercising in Bed

thought of any given bodily change tends to the actual production of the change that thought suggests. Hence the success of mental or faith cure.

It is a well-demonstrated fact that a disease can be induced by brooding over it, so it can in many cases be cured by believing that it does not exist, that being the basis of Christian Science. A fixed determination to be well and implicit faith in a remedy or formula, however fantastic and illogical from a scientific standpoint, bringing about the results desired, though all scientific reasons why it cannot be so should be to the contrary.

The world in all ages has been full of records of innumerable instances of healing through the power of the mind. Science gives no philosophical explanation but simply dumps the records upon the ash heap of superstition and yet for hundreds of years the "King's touch" was a sovereign remedy for scrofula and cured it in innumerable instances. And at this day thousands of well-authenticated cures of serious diseases and of instances of the removal of physical deformities which have baffled surgery and the med-

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ical profession remain to the credit of the various methods of mental healing. Why? Because the will is the directing power of the mechanism of your body, and when you have obtained control of that power you are close in touch with the great principle of life—the mystery no man yet has solved, and whose limit science cannot determine. But there must be a method, a system of will control, or concentration of thought, to effect the object desired.

In Christian Science that method can be found in "Science and Health," by Mrs. Eddy. This book for the most part is simply a collection of religious quotations, lacking both scientific reasons and logic, but the effect of the faithful reading and contemplation of the various marvelous cures instanced seems to have a tendency to place the mind in a receptive condition favorable to suggestion. The disjointed religious sentences, the iteration and reiteration of the ideas, "There is no disease," "Have faith," "You are not sick," "You are well," "You are cured," will finally carry conviction, and if the reader is of the faith and has the confidence which its teach-

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ings demand, the chances are that he will actually be cured. And so of these exercises. If you can understand that with every muscular contraction and its alternate relaxation you are expelling the worn-out and dead tissue which is the real cause of physical age, you will be encouraged to go on, and as you do so and you find your physical condition and health improving confidence in yourself, faith in the system I describe, will come to you and success in your efforts will surely be yours.

To concentrate attention upon the muscles you are endeavoring to develop, count the movements and try to remember the position as shown in the illustration of the exercise you are practicing.

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THINGS TO BE REMEMBERED

All of these exercises are performed in bed under cover of the bed-clothes.

Commence the exercises as soon as you are awake.

Count the movements; this concentrates your attention and growth is then more rapid.

During these exercises frequently take deep breaths.

Keep your windows open both top and bottom.

Breathe through the nose—not the mouth.

Take a tepid plunge bath every morning after exercising; in and out quick.

Learn and practice each exercise before taking up a new one.

Copious water drinking, and especially a glass about fifteen minutes before breakfast, is a remedy for constipation.

Digestion is retarded and digestive organs impaired if you hurry at your meals. Eat slowly and masticate your food thoroughly.

Attend to the calls of Nature promptly.

The chapter upon internal cleanliness, page 249, is important; study it and learn why—it may save your life.

Keep in the sunlight as much as possible.

If you think you are threatened with appendicitis, wash out the lower bowel, the colon (see page 249), and starve—it is more effective than an operation and cheaper.

Massage Exercise for Developing the Biceps and Triceps Simultaneously with the Loin Muscles

Lying upon your side, extend the upper arm downward, parallel with your body. Grasp it firmly with the opposite hand between the elbow and shoulder; that is, around the biceps and triceps muscles (as in the illustration on the opposite page). Then contract and tense these muscles by bending the arm to the second position (as in the illustration facing page 40). Relax by straightening it to the first position.

While thus alternately contracting and relaxing these muscles of the upper arm, massage them vigorously, both in their tensed and relaxed conditions. The beneficial effect of massage of the muscles while exercising has already been described.

During these movements, exercise the muscles of the loin by throwing the upper hip forward (as in the illustration opposite); then back to the original position. This is an excellent and perfectly safe exercise; it will strengthen and give elasticity to the loin muscles, and its practice will

Exercising in Bed

insure speedy development of the upper arms.

The forward movement of the upper hip should be simultaneous with the contraction of the upper arm; commence with five movements, and, as your physical condition improves, increase the number.

Exercise for Developing the Triceps, or Back Muscles of the Arms

Lying upon your side, grasp firmly the upper arm, between the elbow and the shoulder, as in the position shown in the illustration facing this page. Pull backwards with the upper arm, at the same time resisting the pull by the firm grasp and downward pull of the lower hand and arm.

Commence with five movements; that is, alternately pulling and relaxing the strain.

I do not know of any gymnasium exercise, aided by mechanical appliances, that will so speedily develop the muscles described. It is a safe, simple, and very effective exercise.

Twisting Exercise for the Development of the Arms

This movement brings into action all the muscles of the arms, and is exactly like the exercise of fencing, in which the play of the foils necessitates this twisting motion. The benefits of fencing are well known; but as only the right arm is used by the fencer in his amusement that arm is often unduly developed, while the left is neglected. He is, therefore, in this respect usually ill-balanced.

In lying upon your side, extend your upper arm at full length, parallel with your body, as shown in the illustration facing this page. Clench your fist tightly, that the muscles may be tensed. Twist your arm around toward your body as far as possible without inconvenience; then reverse the movement.

Commence with five or ten movements; that is, twisting the arm backward and forward, as directed.

This is an excellent exercise for ladies who wish to add to the symmetry of their arms, as improvement is certain if the practice is persistent. It is, of course, understood that both the right arm and the left must be exercised in this manner; otherwise an unequal development will surely result.

Resistance Exercise for Developing the Arms

Lying upon your side, as shown in the illustration on the opposite page, grasp the upper wrist with the lower hand and pull upward with the upper arm, resisting that pull with the downward strain of the lower arm. At each movement, that is, in the alternate strain and relaxation of the muscles, turn the wrist slightly, as it lies in the clasp of the hand. In the one position, the front of the wrist should meet the palm of the opposing hand; and in the next, the side of the wrist should be presented to it.

This slight change, made by the turn of the wrist, will bring into action another set of muscles, and if you desire to thoroughly exercise the muscular system, do not overlook these apparently trivial changes in position.

To ladies endeavoring to improve the symmetry of their arms, I strongly recommend this exercise. Commence with ten movements, and increase, as your physical condition improves, even to the point of fatigue. Benefit will surely result.

Resistance Exercise for Developing the Fore-Arms

Lying upon your side, grasp the wrist of your lower arm with the upper hand; press with your full strength downward, resisting with upward pressure, as in the illustration on the opposite page.

Commence with five movements; that is, alternately exerting and relaxing the pressure upon the lower wrist; increase, as your physical condition improves, to ten or fifteen. It is a perfectly safe exercise, and will add to the strength of the fore-arm.

This exercise is specially designed for the development of the fore-arm, but you will find that it brings into action and tenses all the muscles of the arm. It should be practiced both upon the right and left side.

Pulling Exercise, for Strengthening the Muscles of the Back and Loins

Lying upon your side, clasp your hands over the upper knee, as shown in the illustration upon the opposite page. Exert your full strength in a steady pull; then relax.

Commence with ten movements (that is, alternately pulling steadily a few seconds upon the bent knee and then relaxing the strain). As you gain strength, increase the movements.

The tension will come principally upon the back muscles of the shoulders, but this is also an excellent exercise for the development of the loin muscles, which are brought into action by the effort.

This exercise is perfectly safe, and improvement in the muscles so treated is certain, if the exercise is systematically and regularly practiced.

In all of these exercises, when the position is upon the side, go through the whole series for that side before changing the position. I practice in the order of the descriptions and illustrations.

Single-Arm Pulling Exercise

Lying upon your side, as in the preceding exercise, clasp one hand only around the ankle of the upper leg, as in the illustration upon the opposite page. In this position, pull with your full strength, holding the strain for a few seconds; then relax.

Commence with ten movements, (that is, alternately tensing and relaxing by the pulling exercise described), and increase, as your physical condition improves, to twenty-five movements.

You will find the tension of the shoulder muscles in this effort different from the preceding exercise, the strain being across the shoulders as well as downward. This, like the pulling exercise, is perfectly safe; the muscles specially brought into action are those which make up the "neck yoke" and those immediately around and bracing the shoulder sockets. It is designed to strengthen and generally develop the muscles of the back.

Tensing Exercise for the Whole Body

There are many deep-seated minor muscles which are not called into activity by the special exercises previously described. The capillaries which should nourish them, and the microscopic veins, by this inactivity, may become clogged, losing their elasticity and efficiency, just as the larger arteries, veins, and muscles will deteriorate under like conditions. It is therefore necessary to bring this dormant machinery into action. To effect this, lie upon your side, fold your arms across your chest, grasp your elbows with the hands, throw your head well back, and stretch your body to its full length, as shown in the illustration upon the opposite page. In this attitude exert at first but half of the strength of your folded arms—the pressure coming upon the elbows, over which your hands are clasped. As you do this, stretch and tense your entire body until it becomes rigid. Hold this position but two or three seconds, as the effect is as though you were lifting a heavy weight. Relax for a few seconds; then repeat the effort. Three or four movements,—that is, alternate tensing and relaxing of the muscles,—as de-

Exercising in Bed

scribed are sufficient. This exercise will set the blood "tingling in every vein," and, most probably, will be followed at first by perspiration.

Commence the exercise cautiously; exert only half your force in the pressure of the folded arms, and gradually increase, as your strength increases. Commence with not more than three or four movements; increase slowly until you have reached ten, which will be sufficient.



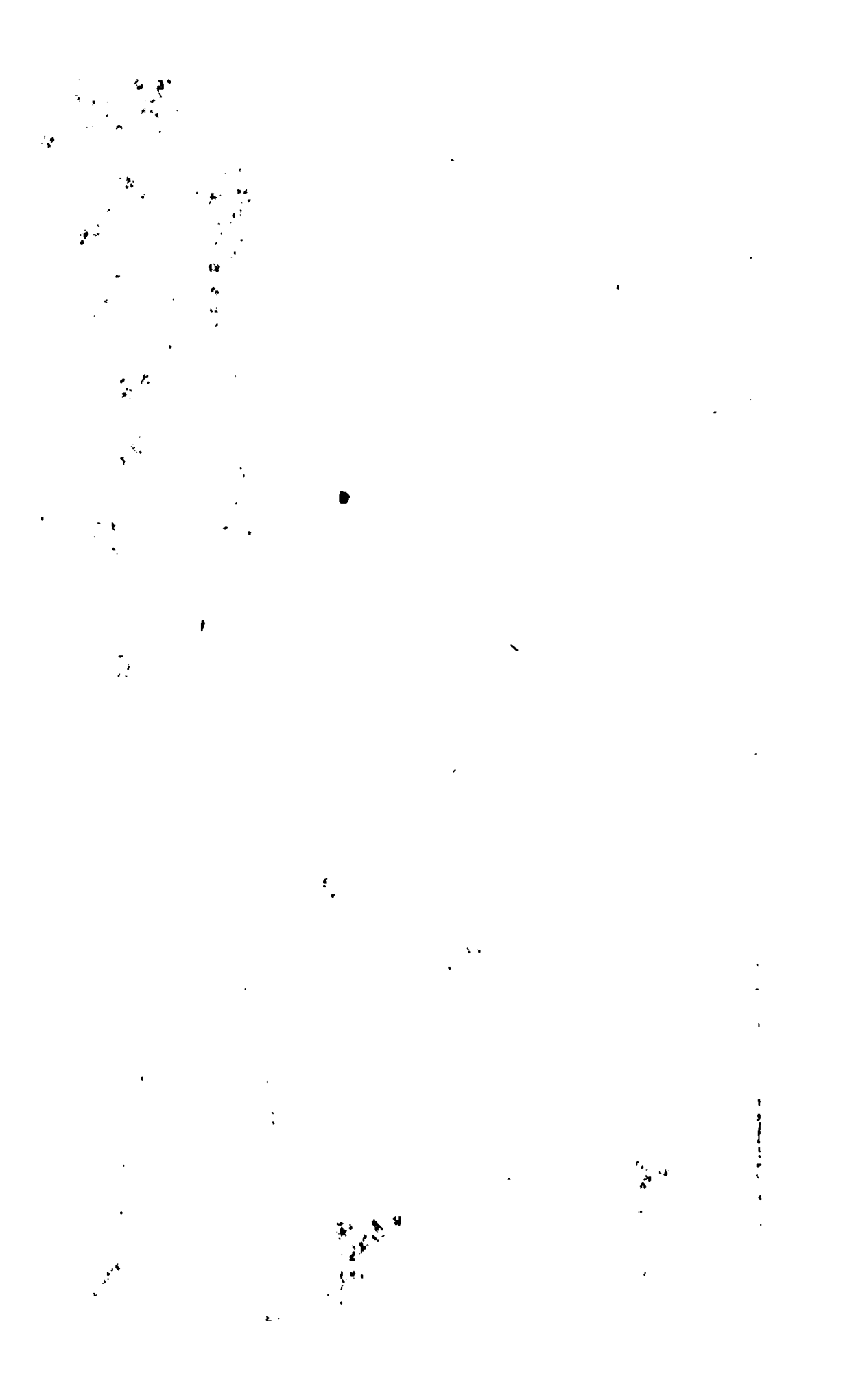
Result of Exercising the Muscles of the Back

Exercise for Developing the Back and Shoulder Muscles

In this exercise, remain in the same position as that just described,—that is, upon your side with the arms folded across the chest,—bend the head well forward, thus tensing the muscles at the base of the neck, and those surrounding it. Exert your full strain upon the folded arms (the lower part of the body being relaxed); in this position shrug your shoulders up and down. This action will alternately tense and relax the large muscles of the upper part of the neck and shoulders.

Commence with five movements, and increase to, say, fifteen.

This is a very effective exercise, and is without danger of strain. The illustration upon the opposite page illustrates the muscles developed by this method.



Bar Exercise Number I

For the Development of the Muscles of the Arms
and Shoulders

Firmly attached across the head-board of my bed is a stout hickory bar $1\frac{1}{2}$ inches in diameter and as long as the head-board is wide.

Lying upon my back, I grasp this bar with both hands, as shown in the illustration upon the opposite page. I employ sufficient strength to bring the muscles of my arms to full tension, but not to move the body.

The action is similar to that gymnasium exercise known as chinning the bar, with the difference that I lie upon my back.

Chinning the bar is a favorite gymnasium exercise with young athletes, as its practice usually results in very satisfactorily developing the muscles specially called into action; but it places a great strain upon the heart, and becomes therefore a somewhat hazardous exercise as we advance in years.

Commence the exercise with five motions; increase gradually, until your physical condition

Exercising in Bed

will warrant twenty-five daily without fatigue or soreness of the muscles.

I weigh, stripped, 140 pounds; the force of the pull would not raise more than half of that weight, therefore the body moves but slightly from its position, while the muscles of the arms and shoulders are thoroughly exercised.

The method I have described is perfectly safe at any age; the pull can be proportioned to your physical condition and the heart will not be over-taxed.



Bar Exercise Number II

**Similar to the Foregoing Exercise, With the Exception
that but One Hand is Used**

This exercise is designed to stretch the large muscles immediately surrounding, and below, the arm pit, which do not seem to be so directly called into action when using both arms. The shoulder, in this exercise, is raised higher, and the tension upon the muscles described is more decided. See anatomical plate, facing page 34.

Commence with five movements and gradually increase to twenty-five, as your physical condition may warrant.

Exercise for Developing the Muscles of the Sides and Loins

Lying upon your side, as shown in the illustration on the opposite page, raise the head and both feet at once; this will contract the side muscles of the loins and the large muscles which descend from immediately below the arm pits into the loins. The exercise will also strengthen the muscles of the stomach. It is an excellent one, but somewhat fatiguing.

Commence with but three movements. Six or seven will probably prove the limit to which you will care to go, as the strain is equivalent to lifting a heavy weight by the muscles described. Therefore, if adopted, the exercise must be commenced and practiced with caution.

THINGS TO BE REMEMBERED

All of these exercises are performed in bed under cover of the bed-clothes.

Commence the exercises as soon as you are awake.

Count the movements; this concentrates your attention and growth is then more rapid.

During these exercises frequently take deep breaths.

Keep your windows open both top and bottom.

Breathe through the nose—not the mouth.

Take a tepid plunge bath every morning after exercising; in and out quick.

Learn and practice each exercise before taking up a new one.

Copious water drinking, and especially a glass about fifteen minutes before breakfast, is a remedy for constipation.

Digestion is retarded and digestive organs impaired if you hurry at your meals. Eat slowly and masticate your food thoroughly.

Attend to the calls of Nature promptly.

The chapter upon internal cleanliness, page 249, is important; study it and learn why—it may save your life.

Keep in the sunlight as much as possible.

If you think you are threatened with appendicitis, wash out the lower bowel, the colon (see page 249), and starve—it is more effective than an operation and cheaper.

Exercise for Strengthening the Lower Abdominal Muscles

In the human being the lower abdominal muscles, which cover that part of the abdomen lying between the hips and lower portion of the pelvic bones, are subject to a continuous strain, as they support the heavy viscera within. If they become weakened through inaction they will relax, and that unsightly condition known as "pot bellied" may result. A far greater danger is also ever present: the possibility—really the probability—of rupture from any sudden strain.

A brief description of these muscles will enable you to understand more clearly the following exercise, designed for strengthening these muscles.

The external, or descending, oblique muscles are situated on the side and fore-part of the abdomen. They are the largest and most superficial of the broad, thin, flat muscles that brace and support the lower part of the abdomen. They are firmly attached to the external surface and lower borders of the inferior, or lower, ribs.

Exercising in Bed

From these cartilaginous attachments other smaller muscles proceed in various directions. They lap, overlap, and interlace, and thus form a muscular webbing designed to support and protect the underlying bowels and organs. These external muscles are again braced by a system of deep-seated internal muscles, the whole forming a wonderfully ingenious structure designed to support and protect the underlying organs.

At this part of the body great muscular strength is requisite to sustain the pressure of the viscera within. If these muscles become weakened, serious results may follow.

The importance of especially exercising and strengthening these supporting muscles is therefore evident. This is very difficult to accomplish when standing erect, but can be readily effected in a recumbent position, as follows:

Lying upon your back, as shown in the illustration on the opposite page, bend one knee upwards and inwards; as you do so, draw up the hip of that side. You will find this action tenses all of the lower abdominal muscles. Then drop that leg back to its original position, and bend the knee, and draw up the hip of the other side.

Exercising in Bed

Alternate in the exercising, first upon the right side, then the left.

The illustration shows the knee bent more than may be necessary, as after a few trials you will acquire control of the hip movement, after which the exercise will be very easy and improvement rapid.

Commence with three movements upon each side, increasing, as your physical condition improves, to twenty-five.

This exercise is valuable in cases of constipation; and when the muscles described are toned up and strengthened, rupture is a very remote possibility.

Exercise for Strengthening the Loins

In that system of military drill familiarly known as the "setting-up drill", there is an exercise especially designed for the development of the loins and side muscles. Standing erect, with the hands upon the hips, the men bend the upper part of the body as far to one side as possible; then reverse, bending to the other side, thus alternately tensing and relaxing the muscles of the loins. It is an excellent method of strengthening the body at this point, as well as a remedy for constipation.

This exercise can be easily performed while lying in bed.

Resting upon your back, with your arms folded across the chest, raise the head and shoulders slightly, so as to clear the pillow.

Commence with ten movements; that is, five upon each side; as your physical condition improves, increase to twenty-five.

This action will tense the abdominal muscles, and place a moderate tension upon the loin muscles, the weight of the head and shoulders being an excellent substitute for the mechanical appli-

Exercising in Bed

ances sometimes used. In combination with, and following, the exercise with the lifting board, every muscle of the loins and sides will be brought into healthy action. If faithfully and systematically practiced, improvement is certain.

Exercise for the Development of the Legs

The Climbing Muscles

In most persons the legs, as they are constantly exercised in the ordinary pursuits of life, are proportionately better developed than the arms. But the mere exercise of walking will not specially develop the large muscles at the front of the thighs and in the calves of the legs, which I will designate as the "climbing muscles." Walking or running, while either brings those muscles into action, does not place any considerable tension upon them, and as a rule neither pedestrians nor fast runners are notable for any unusual development at these points; while, on the other hand, bicyclists and "men of the hills" are almost invariably well developed there.

The leg muscles of the runner are more elastic, and capable of more rapid action, than are those of the adept of the silent wheel or the athlete of the hills, but the former soon tires under the strain of a steady climb, whatever his physical condition may be, simply because he has not developed the muscles then called into action.

Exercising in Bed

It is really only a matter of training. My attention was called to this marked deficiency in the cases of several well-known runners and pedestrians, members of a celebrated San Francisco athletic club. Upon several occasions these gentlemen were the guests of an outing club to which I belonged for several years. We owned a small pack of fox hounds with which we were in the habit of hunting coyotes. The country in which we hunted is very rough, hilly, and impracticable for horses; we therefore followed the hounds on foot.

A coyote, when chased by hounds, always selects for his line of flight the roughest country he can find; and to cut off his flight usually meant a running climb over hills too steep and high to be available for anything but pasturage for the half-wild cattle wandering over them. If the run led up a valley or over level country our guests had no trouble in jogging on ahead of us, apparently as tireless as the hounds whose wild chorus echoed through the canyon; but when the scrub wolf changed his course, and started over the "high divide," the conditions changed. The elastic muscles of the athletes, accustomed only to the smooth floor of the gymnasium or the level

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cinder path, quickly tired when called upon to face the steep sides of "rocky ridge."

I have seen one of these gentlemen make a good showing in a five-mile flat race, while another once held a low mark at 220 yards, and at the time in question both were in excellent condition. But the steep grade and the steady strain of the "high divide," while but a jog for the slower men who were accustomed to the climb, were too much for them.

This, or any other athletic feat, is not so much a matter of natural ability, as of the training of the muscles specially brought into play by the exertion.

The development of these "climbing muscles" of the legs for any exercise of this nature will interest very few, but as a means of developing and adding to the symmetry of the legs it is very possible that the simple and effective means I will suggest may be of more general interest. To bring into action the large muscles on the front of the thigh and those that make up the calf of the leg, *i. e.*, the "climbing muscles," it is necessary to exert a pressure upon the ball of the foot, which can be accomplished very easily as you lie in bed.

Attach to the foot of your bed a cord about $1\frac{1}{2}$ feet in length, terminating in a pulley-weight

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handle. Lying upon your side, grasp this handle, then press firmly against the foot-board of the bed with the ball of the foot, and alternately relax the pressure. This alternate pressure and relaxation will actively exercise the muscles in question, will imitate the action of climbing with the leg so exercised, and will bring no strain or possible injury upon the heart—a danger ever imminent in hill climbing.

The pressure exerted should be equal to that required in climbing stairs or a steep grade. This exercise, if persistently and regularly practiced, will surely improve the symmetry of the legs, and will give one an ability to ascend stairs or climb steep hills, which can never be acquired by the same amount of walking or ordinary gymnasium running exercise. It should be practiced upon both the left and the right side; otherwise the development will be unequal.

Development of the Muscles of the Legs

(Continued)

If from any circumstances the cord and pulley weight handle described in the foregoing chapter should be found inconvenient, simply rest the ball of the foot against the foot-board of the bed and alternately press and relax; or still another and easier way—lying upon your back or partially upon the side, as shown in the accompanying illustration, place the ball of the left foot upon the upper part or toes of the right, tense the muscles of this right leg and foot so that it may afford support, then alternately press and relax with the left foot. Repeat the exercise with the other leg.

The cord and pulley weight handle device is far more effective and development is quicker, but the last two exercises as described can be practiced under all circumstances and will appeal to the members of the greatest organization on earth, i. e., lazy people, of which the writer is a member and a good example.

For this reason all of these exercises are designed to get the greatest amount of special muscular activity with as little general exertion as possible. It is a lazy man's system, but you will find that any and all of these exercises are remarkably effective.

Dyspepsia

Most people are afflicted with some form of digestive disorder, the "quick lunch habit" of the modern business man being more largely responsible for this condition than anything else; for it is not so much what you eat, as how you eat it. If your food is not thoroughly chewed, and, in that process, thoroughly insalivated, it will certainly be digested with difficulty when it reaches the stomach; and if this habit of swallowing the food hastily, and without proper mastication, is persisted in dyspepsia, with its various complications, will surely result.

There is no exception. Nature is a stern creditor, resenting any infraction of her laws. If you violate them, you will certainly suffer for it. And the severest penalties she inflicts are for transgressing the laws of digestion. Under the familiar title, dyspepsia, we group various distressing digestive disorders, most of which could be avoided by properly chewing the food.

I have stated that, in my personal experience, and by the system of exercises I practice, I have found it to be possible to build up the aged human

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body after it has passed the half-century limit, and to restore to it the muscular development it may have possessed in earlier years; and that it is also possible to excel that condition. But this cannot be done when serious digestive disorders exist: until they are remedied improvement will be slow. As the trouble is usually caused by hurried eating and, consequently, insufficient mastication, the logical remedy is to take more time at meals, and chew the food thoroughly. This change in habits alone will, most probably, greatly improve the digestive conditions in a short time.

The next step is to strengthen the muscles of the stomach, for the digestion of food depends largely upon the strength of those muscles.

In the process of digestion, the muscles of the stomach alternately contract and relax, producing a churning motion which, with the aid of the digestive fluids, digests the food. Now, if those muscles are weak, the work of digestion will be carried on poorly and with great effort. If this process of digestion were solely the result of chemical action, then a healthy condition might, possibly, be artificially brought about by medicinal preparations, and cures might be effected by some of the numerous dyspepsia "dopes" advertised through-

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out the world. But, as muscular strength cannot be obtained from any drug, it is certain that these preparations cannot be the infallible remedies for digestive disorders the inventors and their advertisements claim for them. Temporary relief from the distress of indigestion may undoubtedly be obtained from these alleged remedies, and a more careful attention to diet—which the sufferer would most probably observe when taking them—would result in some improvement; but as well expect a cure by the use of opium, or any other anodyne, as to place dependence solely upon any drug, or combination of drugs.

The remedy lies with one's self, and, if the following brief directions are followed faithfully and persistently, any one will succeed as I have done.

Chew your food slowly, that it may be thoroughly insalivated and digested readily. It is also necessary to strengthen the muscles of the stomach. This can be accomplished by the following simple and easily-performed exercise:

Lying on your back, bend your head well forward. (This action will contract and tense the abdominal muscles.) When the head is dropped back to the horizontal position, those muscles will relax.

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These alternate contraction and relaxation exercises will, of themselves, materially strengthen the muscles; but percussion will greatly aid in producing that result. Therefore, as you alternately raise and lower the head, and thus contract and relax the muscles, strike the abdomen rapidly with your clenched fists, at first lightly, but afterwards increasing the force of the blow, as the muscles become stronger. This exercise will determine the blood to that part, will produce a healthy circulation, and strengthen the digestive organs.

Another excellent exercise is to place the palms of the hands firmly upon the abdomen and rub back and forth, much in the way a washboard is used. These two exercises will also reduce any fatty deposit which may have accumulated, and are harmless, inexpensive, and far more effective than the most widely advertised and most lauded "dyspepsia cures."

I speak from experience, as I suffered from dyspepsia for over thirty years, vainly seeking relief during all that time, from the various medicinal remedies prescribed by physicians, or others which I was induced to purchase by advertise-

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ments or by the recommendation of sympathetic friends.

The causes of my trouble were hurried meals, insufficient mastication, and weakness of the abdominal muscles. My cure was effected by the system I have described. To those unfortunates who are afflicted as I have been, I strongly urge the practice of these exercises for strengthening the abdominal muscles.

Percussion Exercise for Strengthening the Abdominal Muscles and Improving Digestion

This method of exercise is described in the pages headed "Dyspepsia." There is but little to add to that statement. Suffice it, then, to say that it is an excellent exercise, and has a very beneficial effect upon all the digestive organs.

Commence with twenty-five quick strokes; increase, as your physical condition will warrant, to one hundred or more. The percussion should be light and rapid.

Continue the percussion, both in the tensed and relaxed conditions of the abdominal muscles, as produced in the foregoing exercise; the tension and relaxation being caused by alternately raising and lowering the head, as in the illustration on the opposite page.

During intervals of rest, if it is desired to reduce abdominal fat, massage and rub the fatty deposit as directed upon the page headed "Reducing an Obese Abdomen". I have been accustomed to extend the body at full length in this exercise,

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as shown in the illustration; but if you find you are impeded by the bed clothes, bend the knees, which will raise the covering clear of the abdomen.

I strongly recommend this exercise to those suffering from indigestion.

The Reduction of an Obese Abdomen

Fat has been termed the packing of the body: and, while it is necessary to have sufficient of that packing to fill up the interstices of the muscles, thus presenting the roundness of the body and limbs characteristic of health and youth, an excess is undesirable and frequently becomes a very serious affliction. Where there is a tendency to "take on fat" it is usually deposited in greater quantities upon the abdomen than upon any other part of the body, for the reason that the fat, being inert tissue, naturally gravitates to the point of least activity. The legs, arms, and back, being constantly exercised in the ordinary habits of life, do not offer such a favorable resting place for fat as the abdomen, upon which the deposit will first appear; consequently, in persons of sedentary habits, we frequently find attenuated limbs in marked contrast to an obese abdomen.

To remedy this unsatisfactory condition, various methods of diet are practiced. Of these the well-known systems of **Hanting** and **Schwenninger** are probably the best. They are published in

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book form, and anyone interested can obtain them at most book stores. In many cases of corpulence the practice of these methods of diet, if adhered to persistently, will finally effect the desired result; but the danger in them is that the reduction of the system in general often produces a weakened condition which effects the heart. Added to this, the reduction of the fatty tissue, being general, is not especially directed to any particular part of the body, and the discomfort entailed in the practice of the systems does not invite its universal adoption. Furthermore, they involve a great deal of self denial.

My experience is that the method I practice and describe, in the following pages, is more effective, less troublesome, and without danger.

It is not definitely known what fat really is, or what is its cause. A carbohydrate diet, that is, such as contains starch or sugar in some form, usually produces the trouble; but, when the system has a well-defined tendency to form fat in excess of its normal condition, a course of dieting and attendant self-denial may not always be successful. We frequently hear corpulent people complain that "everything they eat turns to fat", which in a great measure often appears to be true.

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Fat would seem to be undeveloped tissue, formed in the ordinary process of digestion and assimilation, but upon reaching a certain stage is arrested in its further development, and, instead of becoming living cellular tissue, changes to this inert substance known to physiology as adipose tissue, or fat. When, from some unknown cause, an abnormal tendency has developed, causing an over supply of this form of tissue, it is doubtful if the remedy lies alone in diet.

Muscular activity and agitation at the point of excessive deposit is probably the most direct, surest, easiest, and safest method of its elimination. This activity has the same effect upon such deposits as it has upon worn-out and clogging dead tissue, which I have explained can be forced from the point of lodgment by the alternate contraction and relaxation of the muscles. In short, by the exercise I practice and have described, fatty tissue, when thus dislodged, is carried off by the ordinary process of excretion; and my experience has been that, under no circumstances, is it possible to convert it into muscular tissue.

Obesity is evidently caused by local inactivity, and that being the case, the only logical and successful remedy would seem to be muscular activity

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or agitation, where the fatty deposit is situated. Walking is highly recommended and is undoubtedly beneficial; but it is only an indirect means of attacking the trouble, the motion of the legs not especially bringing into action the muscles of the abdomen, which are covered by the fatty deposit. Therefore, some more direct means of forcing into activity, and thereby dislodging this accumulation of inert adipose tissue, would be more effective. It is a logical deduction that, if the fat is accumulated by reason of sluggish surroundings, then any method which changes that condition to one of activity, will remedy the trouble.

The method I have found most effectual is massage while the abdominal muscles are tensed. The process will be more readily comprehended by full instructions which follow.

Fat is really carbon and the phenomena of spontaneous combustion,—the cause of many mysterious fires,—is a familiar illustration of the method by which fat is consumed in the system and why exercise of the muscles or friction of the fatty deposit will remove it. When the muscles are exercised, that is, alternately contracted and relaxed, or vigorously rubbed, there is an increased flow of blood

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to that point, and therefore an increase of oxygen, as the red corpuscles of which the blood is composed consist largely of oxygen, these coming in contact with the carbon or fatty deposit burn it up. This is the simple explanation of the phenomena. The pumping action of the muscles in their alternate contraction and relaxation expels the ashes, or debris resulting from this combustion, into the venous and glandulous system and it is then carried off by the ordinary excretions of the body. Briefly the remedy for fat is muscular activity, and the exercises described are a safe, easy and effectual cure for it.

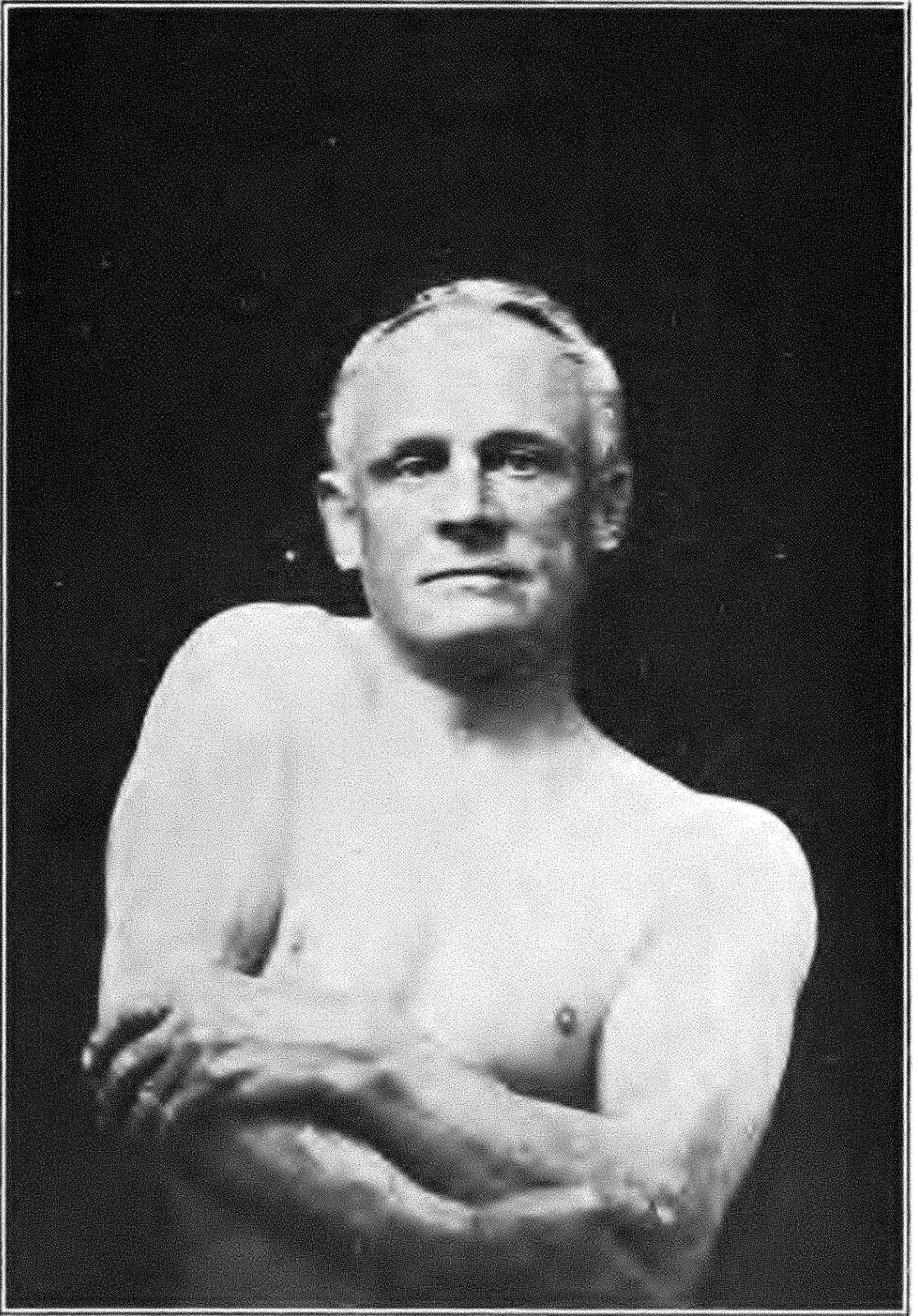
Exercises for the Reduction of an Obese Abdomen

Tense the muscles of the abdomen; place the palms of the hands upon it; press down firmly; and rub the accumulation of fat back and forth, not permitting the hands to slip. Otherwise the skin only will be rubbed, and no benefit results.

Vary this process by striking the abdomen rapidly with your clenched fists, alternately contracting and relaxing the abdominal muscles. The act of contracting is easily accomplished by raising the head.

These exercises are a very effective method of attacking the objectionable deposit, and if systematically and persistently practiced, will certainly achieve satisfactory results. Both of these exercises can be performed most easily and effectively in a recumbent position in bed.

Why adipose tissue disappears under this treatment is explained in the preceding chapter entitled, "The Reduction of an Obese Abdomen."



Developing the Muscles of the Shoulder Blades

Exercise for Developing the Muscles Covering the Shoulder Blades

Lying upon your back, alternately raise your shoulders, as shown in the illustration on the opposite page. The tension should be upward and forward as far as possible.

Commence with five movements upon each side; it is perfectly safe, and in a very short time all feeling of soreness, which may result from the first attempts, will disappear. The movements can then be increased without fatigue, and with very satisfactory results to ten times the original number.

By reference to the anatomical plate facing page 34, you will see that this movement will bring into action the large muscles attached to, and covering, the shoulder blades. It is an excellent exercise for ladies who may be deficient at this point, improvement being certain if these directions are faithfully followed. If your shoulders were ever well developed and symmetrical, that condition can certainly be restored by persistent practice of this exercise.

Exercise for Broadening the Shoulders

Lying upon your back, grasp the left elbow with the right hand, and the right elbow with the left hand. (As pressure is exerted, you will feel an outward or lateral strain upon both shoulders.) The upper arms, under this cross pull, act as levers forcing them apart; the pressure from the right hand upon the left elbow acts upon the shoulder muscles of the left side, while a corresponding effect takes place upon the opposite shoulder. In this position, practice that motion familiarly known as shrugging the shoulders; the lateral strain and tensed condition of the muscles, combined with the up and down movement of the shoulders, is a most effective method of developing that part of the body.

Commence with five movements, increasing daily, as your strength and physical condition will warrant, until you have reached twenty-five with ease, and without any feeling of soreness. This is a very good and effective exercise, and will surely have the desired result if persistently practiced.

The Lifting Board

This exercise was devised in response to many inquiries from athletes who desired some simple substitute for the ordinary expensive lifting machine used in gymnasiums,—something which could be used in connection with this comfortable system of exercises.

The answer to these inquiries is this lifting board. It will be found an excellent device for developing the muscles called into action in weight lifting, but is not necessary to those whose object in taking up this system is simply health. To the athlete I strongly advocate the use of this device, but in moderation. A very marked increase in your weight lifting ability will soon appear, but practice in moderation.

This simple but very effective device for exercising the muscles of the shoulders and loins and thighs is a board 15 inches in length by 4 inches in width. At each end are inserted two strong screw eyes to which are attached ropes 18 inches long, terminating in ordinary pulley-weight handles. This board is covered with flannel, to prevent a chill to the feet.

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The method of its use is shown by the illustration upon a preceding page; the effect is that of the ordinary lifting machine, with the advantage that it is used in a recumbent position, and under cover of the bed clothes. It is the only exercise I practice in which there is any danger of injury, as it is possible to strain the muscles of the loins or shoulders, if too great force is exerted; therefore, in commencing the practice, put on the strain gently for a few seconds; then relax. This alternate tension and relaxation by the lifting movement specially brings into action the muscles of the shoulders, loins and thighs; but it is also an excellent exercise for the whole body.

The apparatus is very simple and easily made. Do not use springs or elastic bands, which you will be tempted to do, thinking they are an improvement. I used them and abandoned them in favor of the inflexible ropes.

The elasticity of the loin muscles in the act of lifting will be sufficient, and you will be better able to determine the amount of lifting strain required. I strongly advocate this exercise, but in moderation. Commence with five gentle movements, increasing, as strength develops, and your physical condition may warrant.



Exercise for Developing and Strengthening the Neck .

Clasp the hands firmly back of the head, as shown in the illustration on the opposite page. Raise the head clear of the pillow; then press it backward, exerting at the same time a strong forward, or resistance, pressure with the arms. Commence with not more than five movements; that is, alternately raising and lowering the head, at the same time keeping up the full strain of the arms. At the end of a week increase one or two movements, as your condition may warrant. My own limit is now twenty-five, which I find ample. By an excess of this exercise, I increased my neck measurement from fourteen to sixteen inches; which, being out of proportion to my height (see illustration, facing page 138), I totally discontinued for about six months, the same measurement reducing to fifteen and one-quarter inches; at which it remains.

The muscles called into action, and specially developed by this exercise, are shown in the illustration facing page 34.

Stretching-Board Device for Broadening the Shoulders

This exercise is only intended for exceptional cases, i. e., those whose shoulders are abnormally narrow. The shoulder stretching board was originally devised for a young man who was notably deficient in this respect. His success in its use decided me to describe and illustrate it as in the foregoing pages. The board is easy to make, inexpensive, and very effective for the purpose described.

In most gymnasiums there is an excellent exercise practiced to broaden the shoulders by the means of lateral tension. Standing between two upright parallel bars, the student grasps them with both hands, his arms outstretched at right angles to the body. The exercise consists in pulling alternately with either hand, first right, then left. This action exercises or stretches laterally the muscles of the shoulders, and, if regularly and persistently practiced, improvement is certain.

At the commencement of my efforts to devise simple methods in exercising in bed, as a substitute for the regular gymnasium exercise, I unsuc-

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cessfully experimented with rings, bars and ropes, which I attached to the sides of the bed, endeavoring to effect lateral tension of the shoulder muscles by such means. I found that, in addition to the inconvenience of the fixtures, the body was unpleasantly shifted from side to side by the force of the pull; while the desired result, directly contrary to that, was an alternate tension and relaxation of the shoulder muscles, without any change in the position of the body.

Finally I tried a board, as long as the spread of my outstretched arms and three inches in width. This I grasped at the ends, the pull of the opposing hands giving the lateral tension of the shoulder muscles without disturbing the position of the body. I found this stretching board very effective, and the only improvement I have ever made upon it is to attach strong iron handles to the ends, that the hands may have a firmer and more convenient hold.

The Exercise is This:

Lying upon your back, with the board resting diagonally across the chest, the hands grasping the ends or handles, as in the illustration on the opposite page, pull with your full force upward as far as possible, that the muscles under the arms

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and extending along the upper ribs may receive the strain; resist with a downward pull of equal force; next reverse the pull, that each side may be exercised.

Second Movement:

With the board lying at right angles across the chest, pull with both hands at once, keeping up the strain for two or three seconds; then relax. Commence with five movements for each exercise; that is, alternately tensing and relaxing the muscles, as described; increase to fifteen movements, as your physical condition may warrant.

Dumb-Bell Exercise

In Combination with Massage of the Biceps and Triceps Muscles

Development of the arms, by this method of exercise, is very much more rapid than by boxing, or any gymnasium exercise practiced with the usual mechanical appliances.

To the celebrated athlete, C. A. Sampson, one of the world's strong men and the rival of Sandow, seems due the credit of discovering that massage of the muscles during exercise greatly aids their development. The method employed by him was the application of strong elastic bands or straps, which he fastened tightly around his arms during his dumb-bell exercise. The alternate pressure and relaxation of the bands or straps, as the muscles were contracted or relaxed, made a very effective massage. He attributed his marvelous strength to this practice.

After studying his method, and the very logical reasons he advances in his book, "Strength," I procured the elastic straps described, and practiced according to his directions. The improve-

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ment that resulted was soon apparent, and it was evident that the system would effect all that its author claimed for it, but the inconvenience of the device was such that I abandoned it. I substituted the exercise shown on the opposite page, using, instead of the elastic straps or bands, simply the pressure of the hands clasped firmly over the upper arm, which I massage while I am using the dumb-bell.

Development of the biceps and triceps muscles will be found to be very rapid by this system.

Commence practice with not more than ten movements; then increase gradually to fifty for each arm; this, with daily practice, should be sufficient to keep the arms strong and flexible. Weight of dumb-bells two to four pounds in accordance with your strength. In traveling or under circumstances where the dumb-bells cannot easily be procured, this exercise can be performed very effectively without them.

Dumb-Bell Exercise for Two Hands

I strongly advocate the use of light dumb-bells. The pair I use weigh four pounds, but half that weight, in most cases, will be sufficient. I have experimented, as I lay in bed, with all sizes up to forty pounds, but I have found that moderately quick action with weights of from two to four pounds the most effective. There is always a danger of over exercise with the heavy dumb-bells; the continuous strain may affect the heart, and certainly has a tendency to bring on that condition known in athletics as being "muscle bound."

The light weights with rapid action, in the position shown by the illustration upon the opposite page, will give an elasticity and general quickness of motion which cannot be obtained with the heavy dumb-bells.

Commence with ten strokes; increase, as your condition will warrant, to fifty or more. It is a safe and effective exercise. After this striking exercise is completed, extend your arms to their full length at right angles with the sides, and alternately turn, or twist, your wrists back and

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forth, so that the arms will partially revolve in their shoulder sockets. If there is any tendency to rheumatic pains at this point, where deposits of uric acid frequently occur, this movement will be found to be beneficial, as it will dislodge such deposits.

Commence with five movements and gradually increase to twenty-five, which at all stages will be sufficient.

The Liver

When the liver is wrong everything seems wrong, for the health of the body depends largely upon its condition and activity. If it secretes bile normally, and performs its other functions healthfully, then the whole body has the benefit of its good work; but if, on the other hand, it is lazy or congested, troubles commence; a torpid or fractious liver being a very serious affliction. The list of troubles resultant from this condition is a long one.

The liver is really a filter through which the blood must pass to be purified, and if this process of purification is improperly performed the blood is poisoned, and any or all of the organs may be affected more or less seriously. When the liver is sluggish there is usually a dull, aching pain in the right side, and often under the right shoulder blade. Then, too, there are pains in the forehead, (more rarely in the back of the head); furred tongue; an unpleasant taste in the mouth at morning; a dingy, yellow color in the whites of the eyes; loss of appetite, and often dizziness; drowsiness after meals, and a generally pessimistic view

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of life. These are some of the disagreeable conditions that result, in varying degrees of intensity, and there are others more serious that may follow, if this, one of the most important organs of the human system, is not kept up to its normal activity.

Without going into the physiological details and functions of the liver, think of it simply as a filter through which the blood must pass to be freed from its impurities, and remember that it must be kept in an active state to properly perform its duties. To accomplish this it must be exercised, as must every other organ of the body, the simplest and most effective method being rhythmical agitation, or massage, performed by oneself in bed, preferably in the early morning, when the stomach is empty.

It is best to first acquaint yourself with the position, size, and general characteristics of the liver, before commencing the exercises that follow. The liver is a gland, or rather a multitude of glands, bound together in one conglomerate body. In an adult, it usually weighs four pounds, and is nearly one foot in length in its longest dimensions. It is situated upon the right side of the body. It occupies a large space in the abdomen just under

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the diaphragm, and is partially covered by the lower ribs. The most accessible point for its exercise or agitation is immediately above the angle of the right hip bone, and under the lower ribs.

It is held firmly in place by five strong ligaments, and nothing but great abuse, such as tight lacing, unnatural pressure, or accidental injury to the region, can displace it; hence there is no possibility that the method of exercise I describe will injure the organ. After five years of practice I can confidently state that benefit alone will result, and that under the most comfortable conditions, and without medicine or expense.

The practice of the three exercises which follow, in combination with those previously described, will surely relieve you of the presence of that child of the Evil One—Liver Complaint—and its companion—Dyspepsia.

Exercising the Liver

First Exercise

Lying on your back, as shown in the illustration on the opposite page, place the ends of the fingers of both hands over that region of the liver at the right side of the abdomen, above the angle of the right hip bone, and below the edge of the lower rib. Then press the fingers upward and well under the rib. The abdominal muscles, being in a relaxed condition in this position, will readily yield to the pressure, and the liver can easily be moved or agitated. Press under and upward, and then relax the pressure, commencing with twenty movements, and increasing up to one hundred when your condition will warrant.

The effect of this agitation of the organ is the same as that obtained in riding a trotting horse, an exercise universally recommended by physicians when the liver is sluggish.

Second Exercise

Lying upon your right side, place your left hand over the region of the liver previously described. Incline the head slightly forward and bend the

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knees, as shown in the illustration on the opposite page. (In this position the abdominal muscles will be relaxed and the liver inclined slightly forward.) Press either the ends of the fingers, or the knuckle of the thumb, well under the ribs, and massage, or agitate, the liver as in the preceding exercise.

While it is true that the first exercise may be sufficient, yet this change of position seems to present another surface for manipulation; and both positions can be practiced with good results.

Third Exercise (Percussion)

Percussion over the region of the liver will also promote its activity. The most advantageous position is upon the left side, the organ then being inclined slightly forward, and the muscles relaxed. Clench the right hand and strike lightly, but rapidly, at the point described.

Commence with twenty light blows, increasing the number to one hundred or more, as your condition will warrant.

The Neck

The principal supports of the neck are two large muscles attached to the base of the skull, and from thence descending to the shoulders;—they form the back of the neck. The sides are braced by another pair of large muscles which are attached to the skull immediately behind the ears, and which descend to the collar bone. These large muscles are braced by minor ones, but upon these main supports the contour and strength of the neck largely depend. If they are poorly developed the back and sides of the neck will appear weak and unsymmetrical; the skin-covering, lacking the proper support, will soon fall into unsightly creases; and in this condition there is an appearance of age which the time of life may not warrant.

Persistent rubbing of the back and sides of the neck with the palm of the hand will, to a considerable extent, efface these wrinkles; but this is a superficial treatment and its effect is but temporary; as, if the underlying muscles are shrunken and weak, the skin—being poorly

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supported—will surely become loose and flabby, and the creases will deepen.

The remedies dear to the feminine mind for this condition are so-called “skin foods” and other greasy preparations of like nature. But as it is impossible to form muscular tissue by their use, the fallacy of the process is evident. The skin will certainly be improved by the friction necessary to apply the preparations, but aside from this the treatment is of no avail.

It is evident that if the muscles described were developed and restored to the condition of earlier years, the skin, being then properly supported, would regain its smooth surface. This can be accomplished by practicing the several exercises for both neck and throat which follow.

Exercising the Neck

Lying upon your side, as shown in the illustration on the opposite page, turn the chin as far as possible towards the upper shoulder. (This movement will contract the muscles upon the side of the neck, and will also bring into action those muscles of the throat immediately under the chin.) When the head drops back to its original position the muscles will relax. Their alternate contraction and relaxation constitute an exercise which will develop the muscles of the sides of the neck, and will also strengthen and improve the contour of the throat muscles.

Commence the exercise with five movements, and increase to fifty or more, as your physical condition improves. Both sides of the neck must be exercised, for otherwise the development will be unequal.

The effect of this exercise upon the neck is shown in the illustration facing page 173. The deep lines which once crossed and re-crossed the back of my neck have wholly disappeared, and my appearance at this point is that of a man of half my years.

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Ladies who may contemplate practicing this exercise need not fear the appearance of undue muscularity which this picture exhibits. The effect of exercise upon the muscles of women is not the same as upon the muscles of men. The knotted and rugged appearance of the muscles of the trained male athlete never appear in women, although similarly trained. Their muscles always remain soft, elastic, and more graceful in their roundness than those of men.

The exercise here described will improve and beautify the neck at a time when, in middle life, it is usually very scrawny.

The Muscles of the Throat

These are voluntary muscles and can be exercised at will. They can be increased in size, strength, and elasticity. The anatomical illustrations facing pages 189 and 190, accurately define the appearance and position of these muscles. Upon them the contour of the throat largely depends. In the illustration facing page 189 you will notice a large muscle attached to that projection in the throat, known in anatomy as the thyroid bone (more familiarly, Adam's Apple), and from that point ascending to the lower part of the chin, where it is attached. In youth that muscle is usually full, round, and elastic, supporting the surrounding tissue and covering skin, filling up the hollows, and giving to the throat the roundness and graceful contour of which the illustration facing page 181 is an excellent example.

As years creep on, if that part of the throat is not exercised, this large muscle, and the minor ones surrounding it, following the general law, deteriorate in strength, elasticity, and size; the tissue shrinks, and the skin, without its former

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support, becomes seamed and wrinkled; then, later, falls into loose hanging folds,—the throat of old age. (See illustration facing page 182). If the muscles underlying the loose-hanging skin, as shown in this picture, could be brought back to their former size and condition, it is evident that the contour of the throat would be greatly improved, for it would assume the outline of earlier years. At what age this improvement, by the methods I practice, becomes impossible, I am unable to say. The photograph which faces page 26 was taken when I was entering my fiftieth year; it shows, under the chin, the loose-hanging skin of age, and that condition remained until I had entered my sixtieth year.

During the period of that ten years, I had industriously and successfully endeavored to improve the rest of my body, but had neglected to exercise the muscles of the throat and face, which consequently presented signs of physical age, in marked contrast to the more youthful appearance of the body and limbs. It being evident that this deterioration was due to the inactivity of these muscles, I devised a system of exercises for their development.

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The results of two years persistent practice in this direction are shown in the profile picture facing page 173. The throat muscles have regained their former strength and roundness, and the skin, being well supported, has caused the loose folds, which are shown in the photograph taken sixteen years ago, to disappear. There is a remarkable improvement over the conditions which then existed. This development of the throat, as well as of the entire neck, has been accomplished with much less exertion, and in less time, than was required to develop the arms and the legs. The most probable reason is, that the throat and face muscles, having never been exercised to any extent, were consequently much atrophied; and this improvement, when they were systematically exercised, was more noticeable. With my personal experience in this direction, I feel warranted in stating that it is possible, and really not difficult, to develop the muscles of the throat and face, by the methods described, after middle age; even after the half-century mark has been passed, wrinkles will disappear, and much of the smoothness of skin characteristic of earlier years may be regained. In short, if you will systematically and

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persistently practice the methods I have endeavored to make clear, the face and neck will assume a much more youthful appearance.

This will require some exertion upon your part, and some time; but it cannot be accomplished in any other way, all statements of the manufacturer and seller of "skin foods," face ointments, or any rejuvenating preparations, to the contrary. I speak from experience, as I experimented systematically and persistently with various "skin foods" and facial ointments for one year, feeling sure that if I could find any preparation which could be forced through the pores of the skin, and absorbed by the underlying glands, it might be possible to restore to the shrunken muscles of the face and throat the condition of earlier years. The result of that year of experiments was a complete failure, for the reason that the cellular tissue of which these muscles, as well as every other muscle and organ of the body is formed, is the result of the digestion and assimilation of the food we take into our stomachs, the fluids we drink, and the air we breathe. It is impossible to feed or nourish the muscles by any artificial means ever discovered. These so-called "skin foods" or face

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creams are not absorbed to any appreciable extent, and the improved appearance of the skin after their application is due to the pores of the skin and the myriads of small lines becoming temporarily filled up with the greasy preparation, while the smooth surface is due to the rubbing necessary to apply it. As before stated, the skin, like any other piece of leather, will polish much better with the palms of the hands dry and clean, than if coated with any greasy mixture.

. There is no royal road to health; it cannot be bought; and if you have ever been endowed with physical beauty, don't waste your time and your money endeavoring to regain it by purchase, for that is not possible.

The rejuvenating methods I have described entail no expense or pain. They are very effective, but their practice rests with you, yourself, and they require both time and patience. If you value your personal appearance sufficiently to work for its improvement systematically and with persistence upon the lines described, my experience is that you will surely succeed. If, however, you conclude, as many will, that it is too much trouble, cultivate a spirit of contentment with your lot, and

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become resigned to the wrinkles and other indications of physical age, as it is impossible to remove them in any other way than as I have described.



The Throat of Youth

Exercise for the Development of the Throat Muscles

First Exercise

Lying upon your side, place your thumb on the throat immediately under the chin, or at about the center of the large muscle which extends from the Adam's Apple to the chin (see anatomical plate facing page 189). If you lie upon your right side, use the right thumb; if upon the left, use the left thumb. Throw the head back to the position shown in the illustration opposite page 185.

Then bring the head forward (chin to the chest) which will relax the tension. Keep up the pressure of the thumb while alternating, contracting and relaxing the muscles by the movements described. This movement will tense the muscles of the throat, which the exercise is intended to develop, the firm upward pressure of the thumb adding to that tension.

Commence with ten movements each morning, increasing gradually, as your physical condition will warrant, to fifty.

This exercise should be practiced while recum-

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bent, both upon the right and left sides. If practiced faithfully and systematically a marked improvement of the contour of the throat will surely result.



The Throat of Old Age

Exercise for the Development of the Throat Muscles

Second Exercise

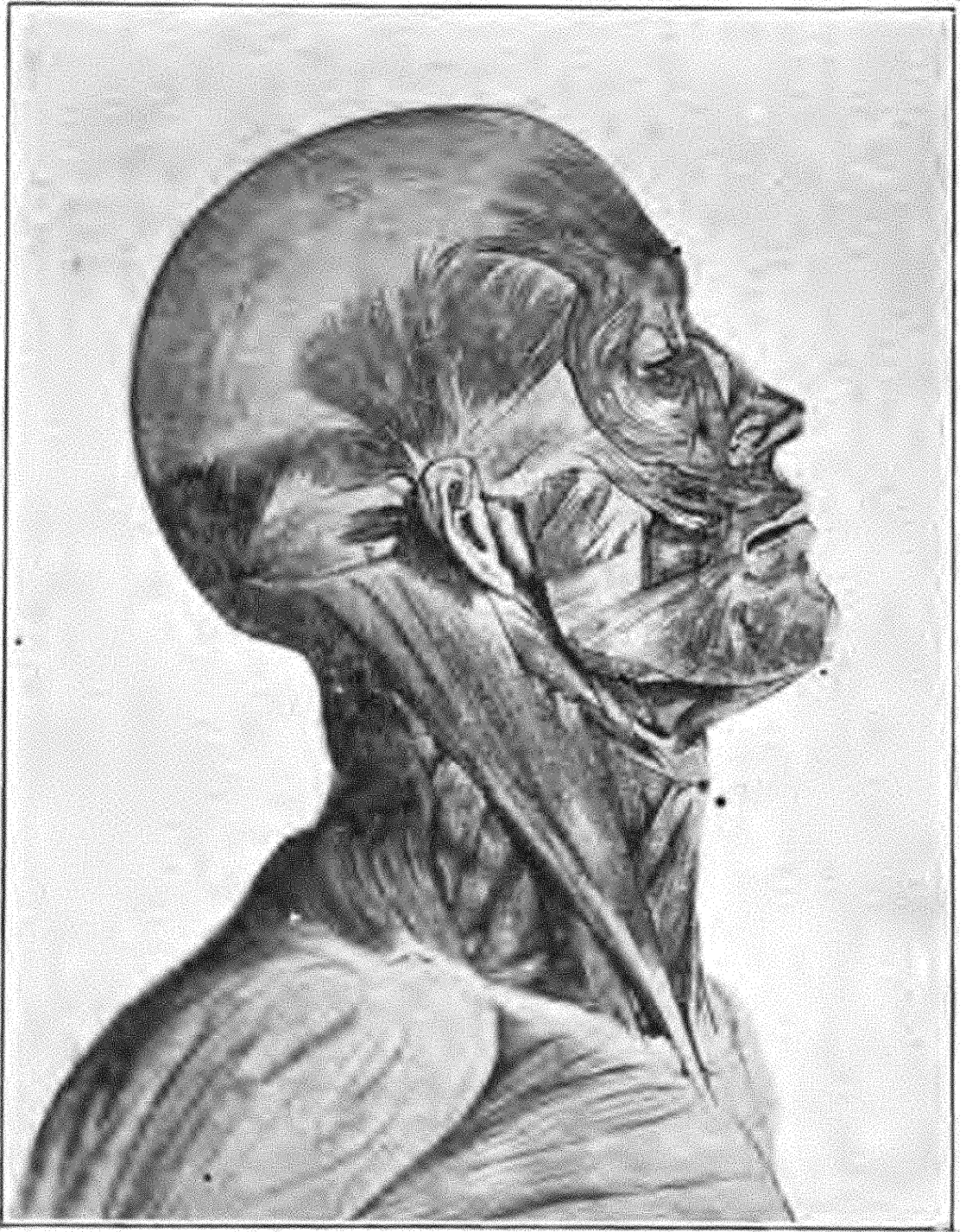
In the same position of the body, without any change in the point of thumb-pressure upon the throat muscles, turn the chin towards the upper shoulder as far as possible (as in the illustration upon the opposite page). This movement will tense the large muscles at the side of the neck, as well as produce a lateral tension upon several of the small supporting muscles of the throat, which should also be exercised (anatomical plate, facing page 189). The upward thumb-pressure will assist in the act of turning the chin toward the upper shoulder, and will add to the muscular tension produced by that movement. Relax the tension by turning the head back to the original position. Keep up the pressure of the thumb, while alternately contracting and relaxing the throat muscles, by the movements described.

Commence with ten movements, gradually increasing, as your physical condition will warrant, to fifty. As the neck muscles increase in strength

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discontinue the thumb pressure; it is only necessary when those muscles are weak.

All of these exercises are designed for both the right and left sides, for if one side alone is exercised, development will be unequal. If there is any feeling of dizziness, practice only the first throat exercise.



Muscles of the Throat—Head Thrown Back

The Rejuvenation of the Face and Neck

The exercises I have described, if persistently and methodically practiced, will surely restore to an aged body much of the lost strength and elasticity of an earlier period of life; for it is possible in this way to restore to the muscles of age the rounded contour they may have once possessed. But if the muscles, especially of the face and neck, are neglected they will present the relaxed and flabby condition characteristic of old age, even though the rest of the body has been developed to the strength of an athlete. The face and the neck, even while one is in vigorous training, may show the wear and deterioration of years, in marked contrast to the apparently more youthful body.

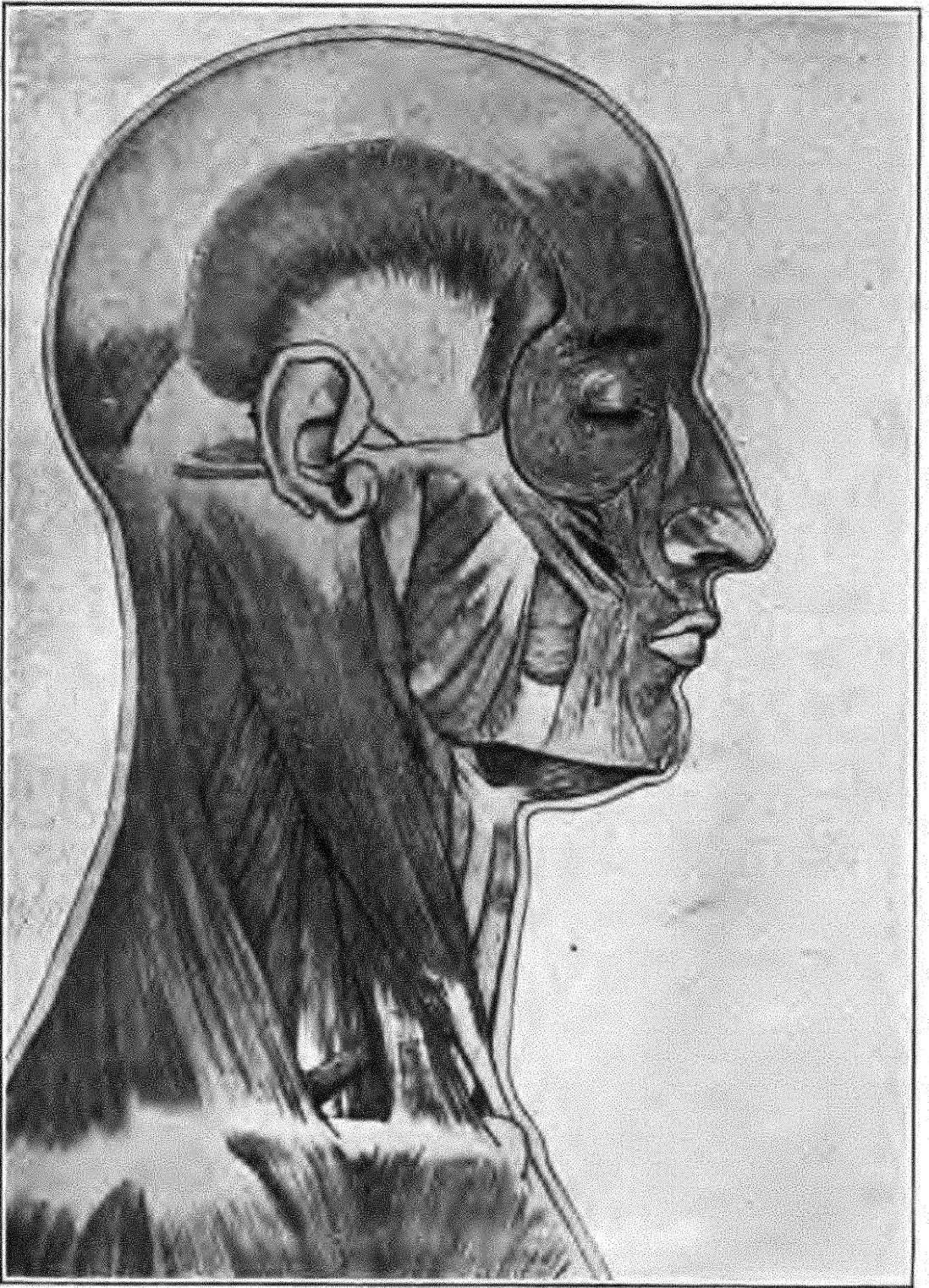
It is therefore necessary to exercise those muscles just as you have exercised the muscles of the body, and they will surely grow in size, strength, and elasticity if so trained. The hollow places in the neck and cheeks can be filled up, the muscles which surround the eyes can be increased in plumpness; and, with a treatment I will now de-

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scribe, that smoothness of the skin characteristic of youth may, to a very considerable extent, be regained.

And this much-to-be-desired condition can be accomplished without cost and without the application of any "skin foods" or other nonsensical frippery of the kind. The process of digestion and assimilation alone can form the cellular tissue of which our bodies are built; and the lanoline, lard, paraffine, etc., which are usually the basis of these so-called "skin foods" are simply smeared on the skin and are not absorbed to any appreciable extent; nor can they be converted into cellular tissue by any amount of rubbing. The skin and muscles, absolutely, cannot be "fed" in that way or with such material, and any improvement in the appearance of the skin which seems to result from their use, is due solely to the friction required in applying the supposed palliative. If a face ointment is desired, use pure olive oil. It will soften the outer skin, is cleanly, and, well worked in, will be absorbed, to a limited extent; and, after being rubbed off, will leave the skin clear and soft.

The true secret of restoring to the skin the smoothness of youth is friction. The skin can be



Muscles of the Throat—Relaxed

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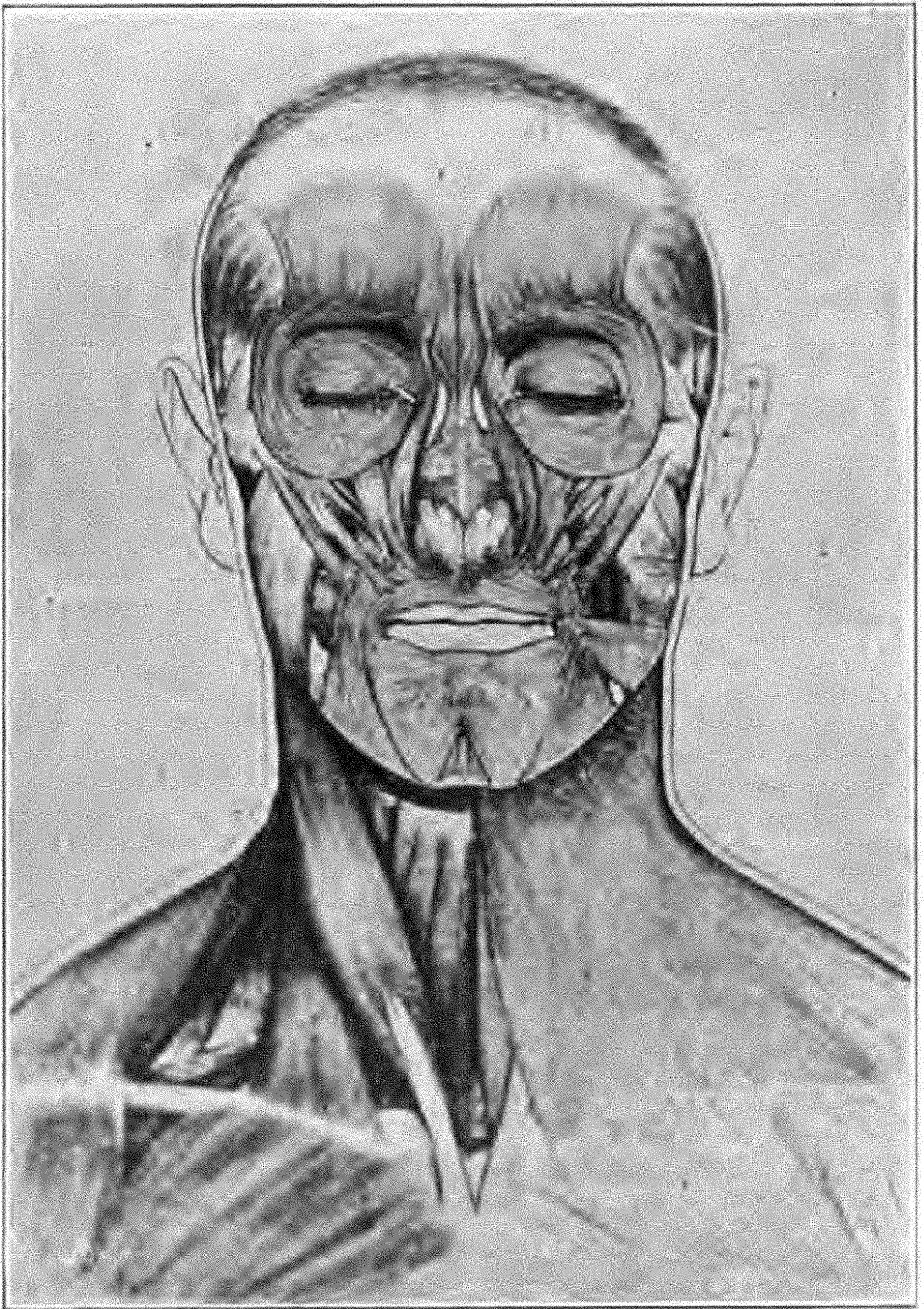
polished like any other leather, and the palms of the hands and tips of the fingers are the very best tools to use for that purpose.

This polishing can be best and most conveniently done as you lie in bed; and, again, like any other leather, the skin will polish much better dry than if moistened. Alternate the polishing process by slapping the face vigorously, thus accelerating the circulation and producing the healthy, ruddy glow of health. If the noise is objectionable, strike only with the fingers; the result will be the same.

The finer grades of soap do not injure the skin. In my morning ablutions I find the shaving soap used by barbers very satisfactory and far the best. As a lotion, after I have washed my face, I use borax, always keeping in a convenient place a quart bottle of water in which has been dissolved as large an amount of borax as the water will take up. I pour a couple of tablespoonfuls of this lotion into the wash basin, dilute it with a cupful of hot water, and bathe my face. There is a tonic effect in the borax which produces a smooth surface to the skin unequaled by any other lotion I know of. When the face is thoroughly dried, after the application, apply a few drops of purest olive oil; rub in well with the palms of the hands, and wipe dry with a soft bath towel. This treat-

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ment, if carefully and persistently followed, will greatly improve the texture of the skin, giving to the face and neck a fresh, healthy, and youthful appearance.



Muscles Surrounding the Eyes

Exercises for the Development of the Face and Neck Muscles

The practice of the exercises especially designed for the development of the face and neck muscles require that you have a knowledge of their location and uses. The anatomical plate facing this page will serve as a chart. You will notice that the eyes are surrounded by circular bands of muscles. In youth they were plump and sustained the overlying skin, keeping its surface smooth and unwrinkled; but, as years lapsed, they shrank in size, through lack of exercise, just as any other muscles of the body would deteriorate under like conditions. The skin covering them lost its support and fell into creases and lines, which we know as wrinkles—the certain indications of physical age. For those wrinkles there can be but one cure, and that is the restoration of their former plumpness to the supporting muscles. If this is not done all efforts towards the eradication of the disfiguring creases and lines will be futile.

The encircling eye muscles may be classed as involuntary muscles, and cannot, to any beneficial effect, be controlled and exercised by the will.

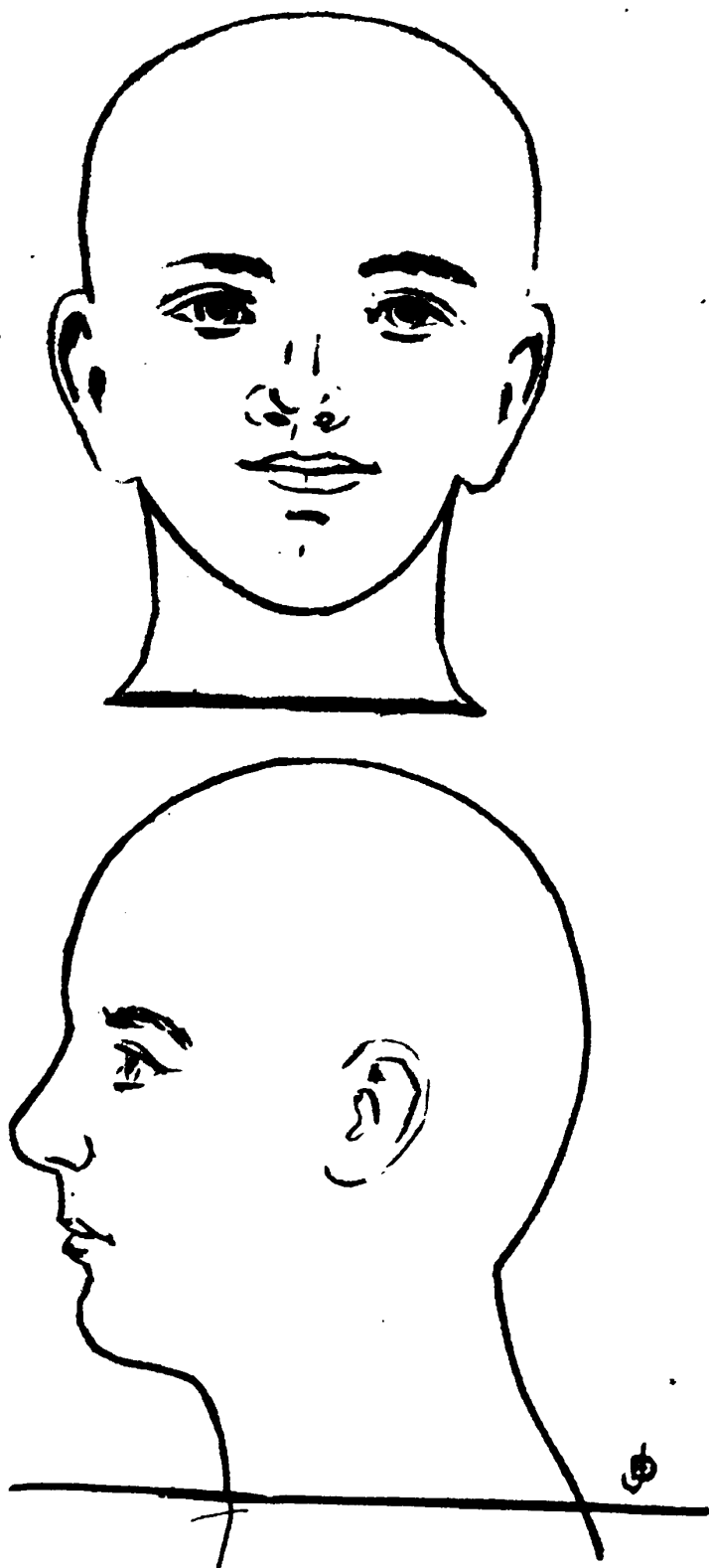
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Their development can only be accomplished by massage. To do this, use the heel of the hand, pressing it upon the bony structure immediately below, and at the corners of, the eyes, that it may rest upon the underlying muscles. Press firmly, that the hand may not slip, and practice the massage movement for several minutes.

Alternate this process by striking rapidly with the tips of the fingers. This percussion action is very beneficial, as it carries the blood to the part so treated, and is of great aid in the promotion of growth of tissue. If these exercises are persistently and systematically practiced, they will increase the shrunken muscles, even to plumpness, and the skin, being supported as it was in youth, the crows feet and disfiguring wrinkles under the eyes will disappear.



The Flabby Cheeks of Old Age



The Smooth Face of Youth

The Lines of Age

As we advance in years certain lines appear upon the face and neck which we associate with age; but these marks of physical deterioration are more often due to neglect than to years. In some women, for instance, they appear at twenty-five; in others, ten years later.

After persistent experiment upon the skin and muscles, for the past seventeen years, I am confident that if the practice of the simple methods described in this book are commenced when the disfiguring lines first appear, it is possible, not alone to efface them, but also to prevent their reappearance, until extreme old age.

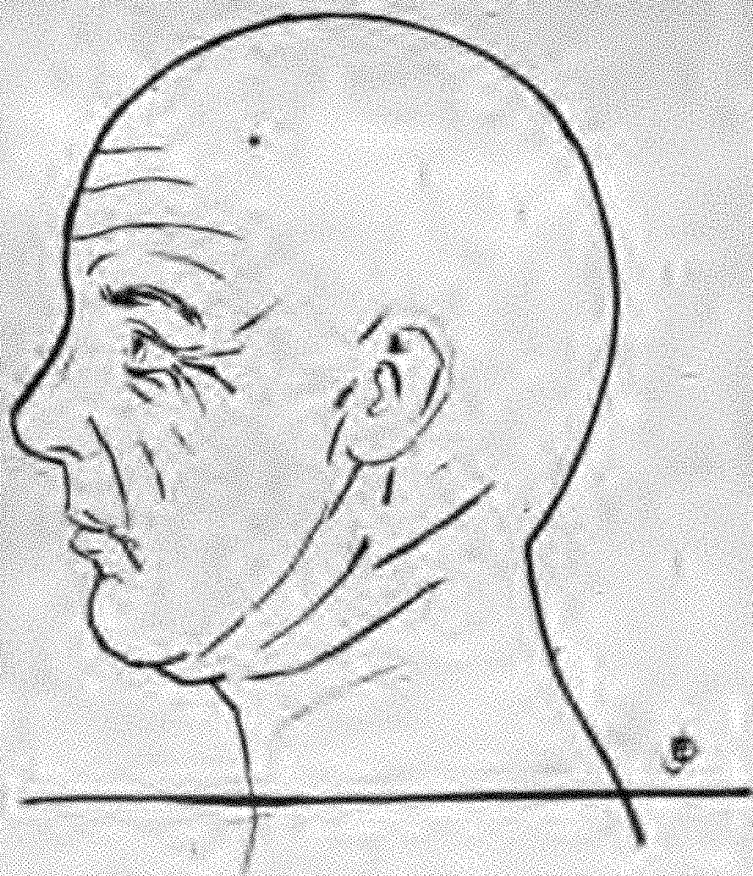
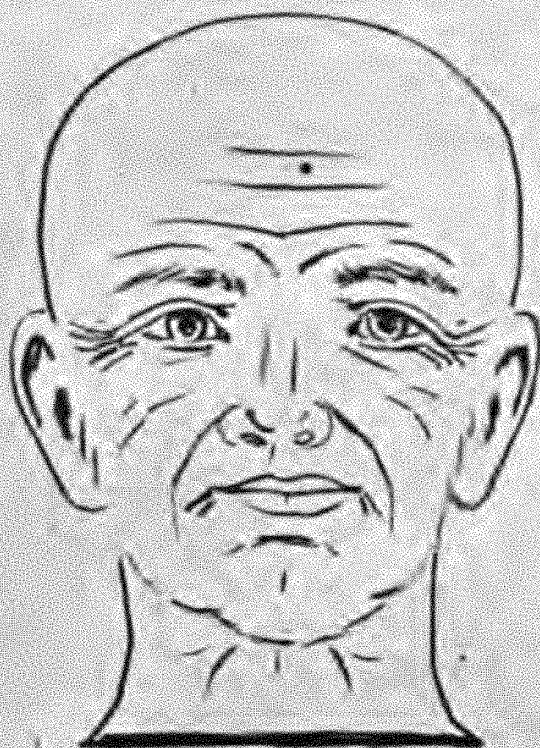
The preservation of the celebrated Beauty of the Sixteenth Century, Ninon de Lenclos, is a well-known instance of this theory. This woman was remarkable for her wonderful physical preservation. At the age of eighty, creditable authorities state, she retained the great beauty of her girlhood, her face having the freshness of youth, and being as free then from the lines of age as it had been at twenty, her white-powdered hair, then

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fashionable, but adding to her youthful appearance.

From the data the writer has been able to gather her smoothness of skin and freedom from wrinkles was due solely to persistent daily friction of the skin of her face, combined with an exercise for the muscles of the neck and throat, very similar to the exercises illustrated and described in this volume. Little was known of the laws of scientific physical culture at that time, but as Madam de Lenclos retained her elasticity of body and graceful figure to the last, it is evident that some system of exercises was systematically and persistently practiced. In that way alone could her youthful condition have been preserved.

Usually the first marks left by time upon the human features—and they are common to us all—are the wrinkles extending from the nostrils to the corners of the mouth, and beyond. As the years advance these are joined by parallel wrinkles, somewhat shorter, about half an inch distant on the cheek. Still later, another, and even shorter, wrinkle appears at a further distance of less than half an inch; and others are also formed, beginning at the corners of the mouth, and extending downward with a slight inward curve.



The Lines of Age

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Wrinkles on the forehead which parallel the line of the eyebrows, with a slight downward bend at the ends, appear. These are generally from three to five in number, according to one's age. The wrinkles commonly called "crow's feet" spread, fanwise, from the outer corners of the eyes over the temples, and are usually from three to five in number.

The skin below the eyes becomes loose and creased. These creased lines start from the corners of the eyes, slightly curving, and overlapping each other. By this time one or two lines usually appear at the sides of the neck, commencing at a point back of the ears, extending below the jaw, and slanting downward to the throat. Immediately behind the ears, too, the skin becomes slightly loose; two short wrinkles form, and a line appears extending down to, and under, the neck. At the next stage a great number of very short, tiny lines begin to appear all over the face and neck—some parallel, others intersecting. These give to the skin a withered appearance. The freshness of youth has departed. Now, too, the skin under the chin becomes loose; all of the long lines meet and overlay and interweave, and combine with the short ones, just appearing, to form a

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tangled web of criss-crossings that deepen as the years advance. This is the skein of life. This is the spinning of time. And the pattern is never beautiful!

The only sure method of erasing these lines is by friction, and this is best accomplished with the dry palms of the hands, as described in the chapter upon the skin. This treatment, if commenced when the disfiguring lines first appear, and if methodically and daily practiced, in combination with the exercise for the muscles of the face and neck, (described fully in the chapter upon that subject), will surely effect a very marked and satisfactory improvement in the personal appearance.

The Skin

The skin forms a protective covering, a close-fitting garment, for the whole body. It is of unequal thickness; over those parts which are exposed to pressure and friction it is thick and tough, but in the case of other parts liable to variations in size it is especially elastic. But in every place it is adapted to the purpose of protection.

It is both a secreting and an excreting organ, and upon its proper action our health, our very lives, depend. If its millions of glands and pores become obstructed it is impossible for one to be healthy. On the other hand, when these openings—the safety valves of the body—are free and clear, the impurities of the body are readily thrown off, the circulation is improved, an equilibrium is established in the eliminating process between the skin and the internal organs, digestion is easier, intestinal and urinary secretions become more regular, and an improvement in the nervous condition results. My own experience has been that daily friction of the skin with goat-hair mittens and a goat-hair friction belt will mater-

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ially relieve insomnia. These friction exercises should be followed by a tepid bath. The moral of it all is: Keep the skin clean by friction and bathing.

The skin is composed of three layers. Overlying the true skin is the cuticle, or scarf skin, and although we commonly call this the *skin*, it is really only a protecting layer over the true skin. It has no blood vessels, so it never bleeds; and, as it contains no nerves, it feels no pain. The microscope shows that it is composed entirely of minute flat scales which overlap each other very much like the shingles of a roof. These scales are formed by the true skin beneath, and are constantly thrown off from the body. Ordinarily this is imperceptible; but sometimes the scales accumulate into masses, when it is called scurf. Or, if the accumulation is upon the scalp, it is known as dandruff.

Upon the condition of the scarf skin the complexion largely depends. If it is rough, a good complexion is impossible. Temporary improvement can be obtained by use of the remedies dear to the feminine mind—"skin foods," face creams, and face powders. But all of these applications have the same result: they simply fill up the

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minute lines, and temporarily smooth the rough surface. But when this coating is washed off, the skin will resume its former condition.

It is not usually claimed for face powders that they will afford more than a temporary improvement, but the manufacturers and venders of so-called "skin foods" positively assert that their preparations feed and nourish the skin, and build up the underlying muscles, and that the benefit derived from their use is therefore permanent. If lanoline, paraffine, white wax, and spermacetti, the basis of all these preparations, could be forced into the true skin and the muscles, and could there be converted into living cellular tissue, of which all parts of the body (the skin included) are composed, this claim might have some foundation of truth. But as these cells can only come into life by the process of digestion and assimilation, the fallacy of the above claim is apparent. You certainly cannot form or "build up" living tissue from dead matter. The term "skin food" is a very attractive title for these greasy, waxy preparations, but neither the skin nor the muscles can feed on that kind of food. By friction some slight absorption of the higher grades of oil is possible; but even this does not become living tis-

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sue. As this absorption is limited to only the very highest grades of oil, it is manifestly impossible for the skin to take up paraffine, white wax, or any of the other coarse concomitants of "skin foods."

Their immediate effect, as before stated, is to coat the surface of the skin, which, after their use, assumes a smoother appearance. But this is temporary, and there can be no growth or improvement of the underlying muscles by such applications. The objection to these greasy ointments is that they clog up and obstruct the myriads of underlying pores and glands. If you would have a healthy skin, these outlets for the impurities of the system must be kept clean and clear. Otherwise the skin cannot be healthy.

The secret of a fresh, healthy skin is friction and cleanliness. Upon the body use the goat-hair friction mittens and the friction belt of the same material. It is advisable that these friction exercises be practiced daily—after the other exercises described in this book—and followed by a tepid bath.

For the face and neck, friction with the dry palms of the hands is an effective method of removing wrinkles, as they can be rubbed out, and

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the skin can be polished, as elsewhere stated, just like any other piece of leather. For the ablutions of the face and neck use tepid water softened with borax, as already advised.

In a very short time after commencing these friction exercises for the body, you will find that the nervous system is quieter and that both the digestion and the circulation are improved. And what will prove of special interest to ladies is that the friction exercises for the face and neck will surely result in a marked improvement.

I have demonstrated upon my own face and neck that by this method wrinkles can be removed even in advanced age, and I am positive that if this friction exercise is commenced when the lines first appear and is persistently practiced, they will be eradicated and will not again appear until extreme old age. This is the method that was practiced by Ninon De Lenclos, the celebrated French beauty of the seventeenth century, and it is the only successful method for removing wrinkles and retaining the smooth skin characteristic of youth.

The Muscles of the Cheeks

As years creep on the cheeks sink in and hollows appear in them where, once, they were full and plump. This is due to the shrinking of the supporting muscles, as shown in the illustration facing page 195. There are four of these muscles on each side of the face; they are attached to the cheek bones under the eyes, and from thence descend, and are attached to the jaw. As we grow older, these muscles lose their strength and elasticity, and this change produces the pendant, or loose, jowl characteristic of age, just as their lessened size is the cause of the hollows in the cheeks. These are voluntary muscles, and can be exercised at will just as you would exercise the muscles of the arms or the legs.

THINGS TO BE REMEMBERED

All of these exercises are performed in bed under cover of the bed-clothes.

Commence the exercises as soon as you are awake.

Count the movements; this concentrates your attention and growth is then more rapid.

During these exercises frequently take deep breaths.

Keep your windows open both top and bottom.

Breathe through the nose—not the mouth.

Take a tepid plunge bath every morning after exercising; in and out quick.

Learn and practice each exercise before taking up a new one.

Copious water drinking, and especially a glass about fifteen minutes before breakfast, is a remedy for constipation.

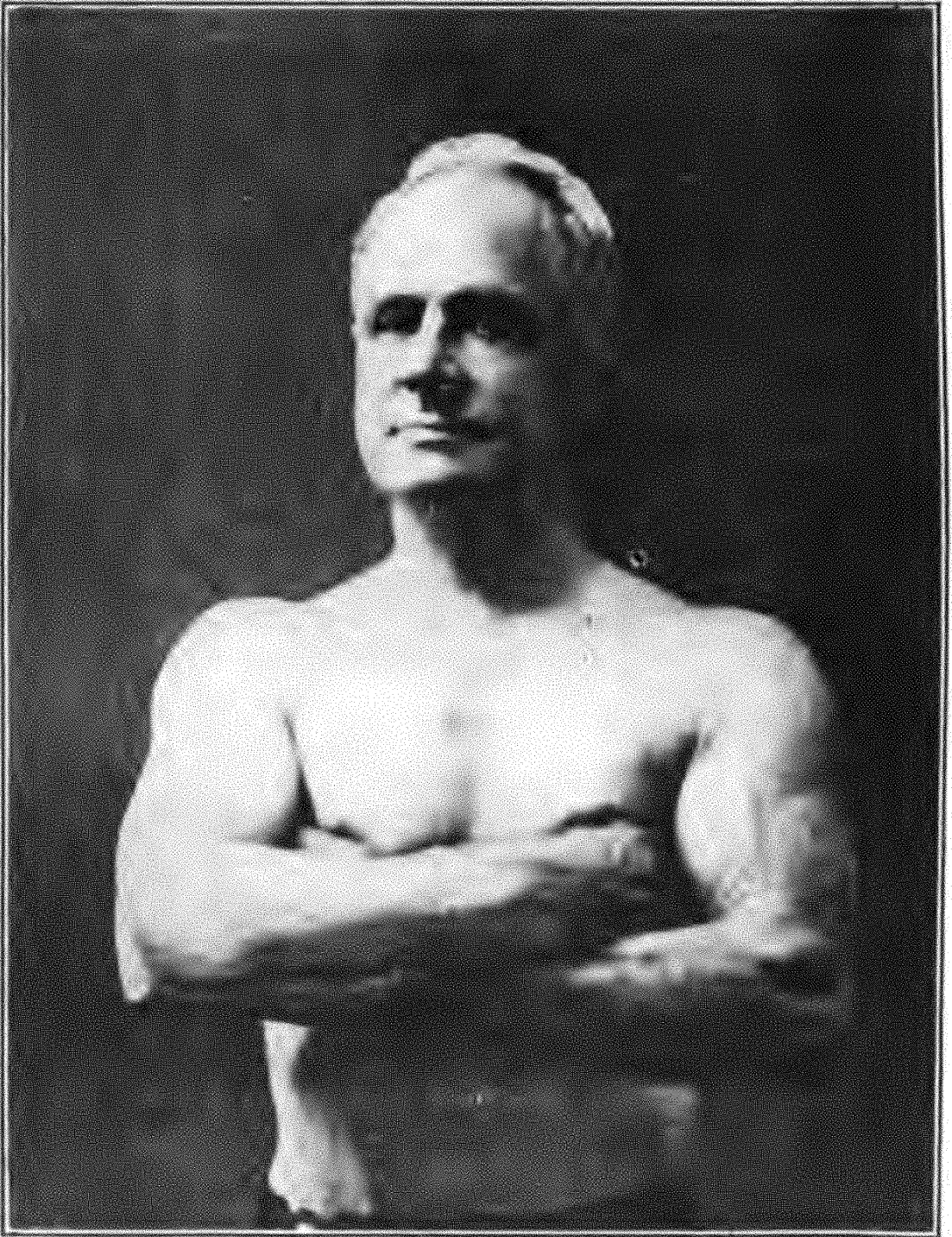
Digestion is retarded and digestive organs impaired if you hurry at your meals. Eat slowly and masticate your food thoroughly.

Attend to the calls of Nature promptly.

The chapter upon internal cleanliness, page 249, is important; study it and learn why—it may save your life.

Keep in the sunlight as much as possible.

If you think you are threatened with appendicitis, wash out the lower bowel, the colon (see page 249), and starve—it is more effective than an operation and cheaper.



Development of Shoulders and Biceps at Age 70

Exercising the Muscles Which Cover the Shoulder Blades

Lying upon your back, as shown in the opposite illustration, strike with your elbow across the chest. This movement will bring into action and develop the muscles covering the shoulder blades. Five movements for each arm will be sufficient to commence with. This exercise is valuable where there are any indications of acid rheumatism in the muscles described. I speak from personal experience.

Massage for the Muscles of the Chin

The muscles of the chin may be classed as involuntary, and can only be developed by massage; but they usually respond more quickly to that process than the muscles that surround the eye.

Rest the chin upon the palms of your hands; press firmly; and rub the underlying muscles vigorously; the same method described for the muscles surrounding the eye, but requiring more pressure.

The position of the hands should be continually shifted, for, if continuous pressure is maintained upon any part without relaxation, growth is not so rapid. Change positions, as I have suggested, and if your chin was ever full and round in youth, that condition will, by persistent practice, be regained.



**Cross Section of Skin Showing Hair-Shaft and
Attached Muscles**

The Hair

To understand the cause of the loss of hair and how to prevent that misfortune, it is necessary to know how the hair itself is formed, and how nourished, and the conditions favorable or unfavorable to its growth. Having learned this, the methods by which its loss can be arrested, and vitality regained, may be more readily comprehended and successfully practiced.

Facing page 225 appears an illustration which shows a transverse section of the skin of the scalp. This is taken from a greatly enlarged photograph, showing very clearly how the hair shaft, with its minute muscles and capillaries, appears under the microscope. The illustration exhibits a single hair; it is a tube composed of the same element as the nails or the bones. The secretions by which all three are formed are the same, and they do not appear to decrease as age advances. Therefore the immediate cause of the loss of hair would seem to be, and usually is, local. Tight or heavy hats, dissipation, sexual excesses, weakness of the muscles which are attached to each root of hair, defective circulation, uncleanness of the scalp,

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microbes or germ diseases in the scalp, and failure to remove dead hairs which impede the growth of new ones: any of these may produce baldness. Remove the cause, or causes; follow the simple directions contained in this chapter; and wherever life remains in the follicles, or hair roots, new hairs will sprout. But if life has departed from them no power on earth can grow hair.

If the trouble is constitutional, or from any cause which tends to lessen the vital forces, practice the simple system of physical culture I have already described.

The result will surely be an improvement in the general physical condition, and a proportionate improvement in the health of the hair.

The coloring matter is generated in the hair bulb, and from there forced up through the tubular hair shaft. The character of the secretions determines the color of the hair. What the chemical combinations which produce that color are, we do not know; but as years increase, there is evidently a chemical change in the secretions, which causes a loss of the coloring matter. My own experience, and the result of sixteen years research, in this direction is that it is not possible to restore the color when it has once departed, all of

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the preparations advertised for that purpose, with the thousands of testimonials to their infallibility, to the contrary. I will modify that statement: you can restore it with dyes, but the deception is sure to be detected sooner or later, and, added to this, the dye will injure the hair.

The scalp is similar to the face or any other part of the body. It is filled with thousands of little pores, which are constantly eliminating refuse matter; in addition to which the sebaceous glands throw off a certain amount of oil which adheres to the scalp. This dirt and animal filth must be removed, or the pores will be clogged,—a condition which is very injurious.

When the hair is long, as usually worn by women, the scalp should be thoroughly cleaned at least twice a month; or, if of the ordinary length worn by men, at least twice a week. The best soap for the purpose is that used by barbers for shaving, as it seems least injurious to the skin.

Don't be afraid of water and good soap. Thousands lose their hair through neglecting to shampoo it properly. On the other hand, it is doubtful if any injury can result by the opposite extreme, provided the hair is thoroughly dried after the cleansing process. When dry, a few drops of olive

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oil will produce an attractive and healthy gloss. The use of hot and cold water, alternating quickly from one application to the other, is of great value as a tonic for both hair and scalp, as it accelerates the circulation of the blood in the parts so treated.

Have the temperature of the heated water as hot as you can bear it, and the other as cold as possible without using ice;—hot and cold wet cloths applied alternately is a convenient substitute, if you cannot douse your head with the water itself. The change from hot to cold should be made at least five or six times at each treatment, but double that number will be beneficial and can do no harm. If life still remains in the roots of the hair a healthy growth will usually result. The tonic effect of this process is far more efficacious than any medicinal “hair invigorator” yet invented.

If the scalp is itchy, and there is a suspicion that microbes or germs of disease exist on it, dampen it with a carbolic acid wash. To one pint of water add a sufficient quantity of carbolic acid to produce, when the skin is moistened with the lotion, a very slight sensation of tingling, or heat. This treatment will, with daily applications, require about three weeks. It will surely destroy any

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germs of disease with which the scalp may be affected. It is an excellent tonic as well as an infallible and clean germicide, harmless, in the proportions advised, and superior to any advertised expensive hair tonic or germicide which you may purchase.

When the hair is falling out many people are afraid to brush or wash it, fearing a still greater loss, and thinking to retain the dead hairs in the scalp. This is a serious mistake, as those dead hair roots, like any other decaying dead matter, are injurious to the healthy roots near them, and if allowed to remain increase the trouble. They should be removed for the same reason that decayed fruit is removed from its healthy neighbors. Dead and decaying matter is a menace to the life of a hair, just as, upon a larger scale, dead matter and unsanitary conditions are a menace to the life of a human being. In addition to these injurious effects of the dead roots, they impede the growth of new hairs which would spring up in the place of the dead ones, but which cannot do so while the dead roots remain. Remove the dead hairs as soon as possible, and other healthy hairs will replace them, springing from the same follicle, or root sheath.

Exercising in Bed

The process is simple:

As I lie in bed I grasp my hair with my fingers, pulling gently, and changing the position of my hands until every part of the scalp has been treated. I alternate this pulling process by massaging the scalp with the tips of the fingers, which produces a perceptible glow, and has a general tonic effect, as it stimulates the circulation, and evidently determines the elements which feed the hair to the roots. By this hair-pulling process the scalp is lightly raised from the skull. The microscopic muscles and glands thus exercised, and obeying the general law of exercise, increase in size, strength, and elasticity, just as the larger muscles of the body are benefited by systematic exercise.

Go without your hat as much as possible. The practice is now popular, being a fashionable fad, and no longer specially noticeable. The sun has a very invigorating effect upon the hair. Baldness, among the races that do not wear hats, is almost unknown; but among the peasants or farmers in southern Germany, who wear their hats or caps day and night, baldness, without regard to age, is the rule rather than the exception. I have lived in an Indian country and I do not re-

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member of ever having seen a bald-headed Indian. That is a hint from nature.

Many people are afraid to use soap and water upon their hair, and quote self-constituted authorities in support of the statement that their use is injurious. Why should water be bad for the hair of the head but good for the hair of the beard or moustache? Such a contention is not logical, for the hair on the head and the hair on the face are identically the same; and it is certainly a most unusual occurrence for a man's beard to fall out unless caused by some local germ disease. That the beard is luxuriant in some individuals, while the scalp is devoid of hair, is to be accounted for by the fact that such men wash their faces and beard daily, and, in the drying process pull and exercise the roots; after which they brush it to keep it arranged. In this way they remove the dead hairs. As the skin is kept clean, by the face-washing process, the conditions are favorable to the preservation of the hair upon that part of the head, even though the scalp may be bald.

Another mistaken belief is that when dandruff falls from the scalp it indicates a diseased condition. Dandruff is merely the exfoliation of the

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scarf, or outer skin, with the dried oil and waste matter thrown off by the glands.

The practice of the methods described will certainly relieve the trouble.

One of the arguments against washing the hair is that it causes or increases dandruff. The fact is, the dandruff was there before the scalp was washed, and the cleansing process merely dislodged it, so that its presence was more apparent.

Perspiration has a very injurious effect upon the hair. Athletes, especially, are sufferers from it, as they usually come in from long runs or other active exercise with the perspiration dripping from their every pore, the hair being as wet as the rest of the body. While particular efforts are made to bathe and cleanse every other part of their bodies, the scalp is neglected, the poisonous dead matter being allowed to remain and dry where it was eliminated. It is this neglect which is often noticeable among those whose excellent physical condition, due to athletic training, would seem to be a guarantee that the poor condition of their hair is not due to constitutional weakness.

Use daily a stiff brush; press the bristles well in; rub back and forth, and from side to side, thus loosening the dead skin, dried oil, etc., before try-

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ing to brush them off the head in the usual way.

Have the hair trimmed often; the ends may split if this is neglected. Don't singe it. I do not believe the practice to be injurious, but it is simply a useless and expensive process, which can be better accomplished with the shears. The methods I have described are all logical; they are certainly inexpensive and easily performed, and I know from personal experience they are effective. Practice them as I have done and you need not fear the loss of your hair.

Deep-Breathing Exercises for the Development of the Lungs

A treatise upon the simple exercises and methods by which I am physically a young man at sixty-seven would be incomplete without a page upon breathing; for to breathe is to live, and “without breath, there is no life”. Differ as we may as to the virtues of the innumerable remedies and systems advocated throughout the world for the preservation of health, we all agree that life is absolutely dependent upon the act of breathing, and that man cannot be healthy unless this function is performed as nature intended.

At the commencement the infant draws a long, deep breath, instinctively retaining it to extract from the air its life-giving property; then exhales it in a long wail, and its life upon earth begins. At the end, with the chill of death upon him, the heart of the old man flutters faintly—then one gasp—he ceases to breathe, and the life principle, dependent upon that act, leaves the body forever. From the first faint breath of the infant, to the last gasp of the dying man, it is one long story.

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of continued breathing, for life is but a series of breaths.

Man may exist for a month without eating, a much shorter time without drinking, but without breathing his existence upon this earth will be measured by a few—a very few—minutes. “Air is life,” and without pure air good health is impossible; therefore keep in the open air as much as possible. See that your home is well ventilated, and sleep with your windows open. As you walk, frequently inhale deeply, filling the lungs slowly as full as possible without any feeling of dizziness, then exhale slowly, allowing the duration of inhalation and exhalation to be about equal. Practice this exercise as much as possible in the sunlight, for we are all dependent upon the sun for the life principle; its rays are filled with vibrations of energy and life, and the air vitalized by sunlight is an inexhaustible storehouse from which we extract the vital force as we breathe.

As you lie in bed in the morning, with the windows open, practice this deep-breathing exercise, the same movement as in walking. The most convenient position is upon your side or back.

It must be admitted that athletes or professional strong men are, as a rule, short lived, con-

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consumption and pneumonia being most frequently the cause of death among that class of men who, by reason of their strength and physical development, would seem to be immune from those diseases. Usually the sudden death of a noted athlete from pneumonia is attributed to dissipation after the arduous work of preparation for some athletic event, or undue exertion when "out of training". While this is often the case, it will not account for the deaths, by consumption and pneumonia, of a number of professional strong men, who were noted for their abstemious lives. The real reason has been that their bodies were unequally exercised; the external muscles being developed to their fullest capacity, but the lungs, being neglected, have remained in their original condition, and far inferior in their development to the powerful external structure. In this condition any unusual strain or exposure which might not have any deleterious effect upon the strong and thoroughly seasoned external muscles, might work very serious injury to the comparatively weak and poorly developed lungs. Like a chain, which is only as strong as its weakest link, this, the weakest part of the body, suffers.

If you would be healthy, develop the body

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evenly; and if these exercises for the lungs are practiced as described, you need not fear pulmonary diseases.

I speak from experience, for my father died of consumption at the age of forty-two. I inherited weak lungs and a tendency to that dread disease. By these lung-strengthening exercises, I have increased the expansion of my chest from two and one-half inches to five and one-half inches, and am absolutely free from coughs, colds, or any lung weakness. I strongly urge the adoption of these deep-breathing exercises, or any other system of training or physical culture.

Cleanliness

External

The skin protects the soft and sensitive parts of the body from mechanical injury, and from the effects of heat or cold. It has over two million sweat tubes, aggregating several miles in length, through which it throws off from ten to fifteen thousand grains of dead matter daily. The under layer of skin is covered with a complete network of blood vessels spreading over a surface of nearly fifteen square feet.

There are also numerous oil glands which constantly throw off fatty secretions; an active, clean, healthy skin is, therefore, a very important factor in the process of eliminating dead and clogging matter, and in greatly aiding the work of the kidneys and lungs. It is essentially one of the principal conditions of health, while, on the other hand, an inert, dirty skin must necessarily increase the labor of the organs mentioned, hasten their decay, and shorten life. By profuse sweating the weight of the body, when in a gross condition, and when there exists an excess of adipose tissue, can be

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reduced from two to five pounds in an hour.

When the skin is in an inert, stagnant condition, any sudden change in the atmosphere, which could have no injurious effect upon a healthy, vigorous skin, may produce a chill by which the secretions are checked, with the result that a large amount of blood may be driven to the interior and some of the organs may become congested. A bad cold, with all of its attendant discomforts, may follow, with the possibility even of other and more serious complications.

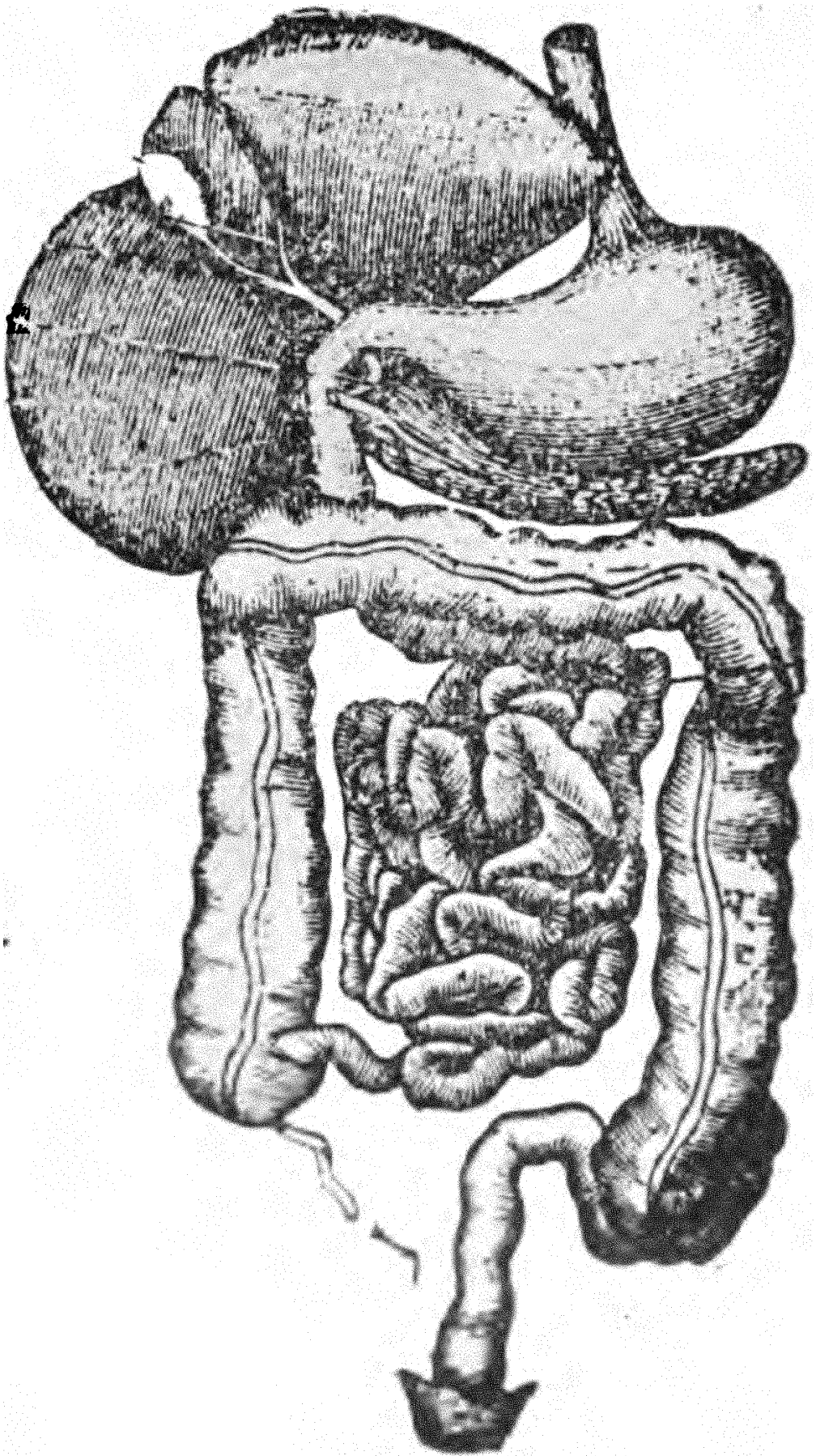
The necessity of keeping the pores open and free, to eliminate the waste matter, is quite evident, and the very best way to remove the surface dirt and accomplish the desired end is by the plentiful and frequent use of soap and warm water. Previous to the bath, create a friction on the back and shoulders and back of the legs with a rough Turkish towel, and on the chest, stomach, and front of the legs with horse-hair mittens, which can be purchased at almost any drug store. This will loosen the dead epidermic scales and the impurities lodged upon the skin, and greatly add to the benefit of the bath.

I advise the tepid bath; it is very true there is usually an invigorating effect in the cold bath

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where prompt reaction follows, but in the case of persons of advanced years, or those in poor health, recovery from the shock of cold water may not be prompt, and a distinct lowering of the vital force will temporarily follow. The face will appear drawn, and a sensation of exhaustion will be felt for some time afterwards; while, with the tepid bath, if the skin is previously subjected to vigorous friction—as described—the circulation will be accelerated, and the same tonic effect will be obtained, without any lowering of the nervous energy.

The water should be of about the same temperature as the skin. If it be too hot, and the bath prolonged, the muscles will relax, and a feeling of lassitude will result. Therefore, my advice to those advanced in years, or in poor health, is to use the tepid bath as the “happy medium”. Create a friction on the body as directed; then, let there be a quick, but total, immersion. This practice daily will be sufficient to keep the skin in a healthy condition.



Organs of Digestion

Cleanliness

Internal

I earnestly advise the “internal bath”,—what is usually designated as “flushing the colon,” or “rectal irrigation”,—but most decidedly not what is known as taking an injection. Mere injections of a pint or a quart of water, as usually practiced, are insufficient and ineffective.

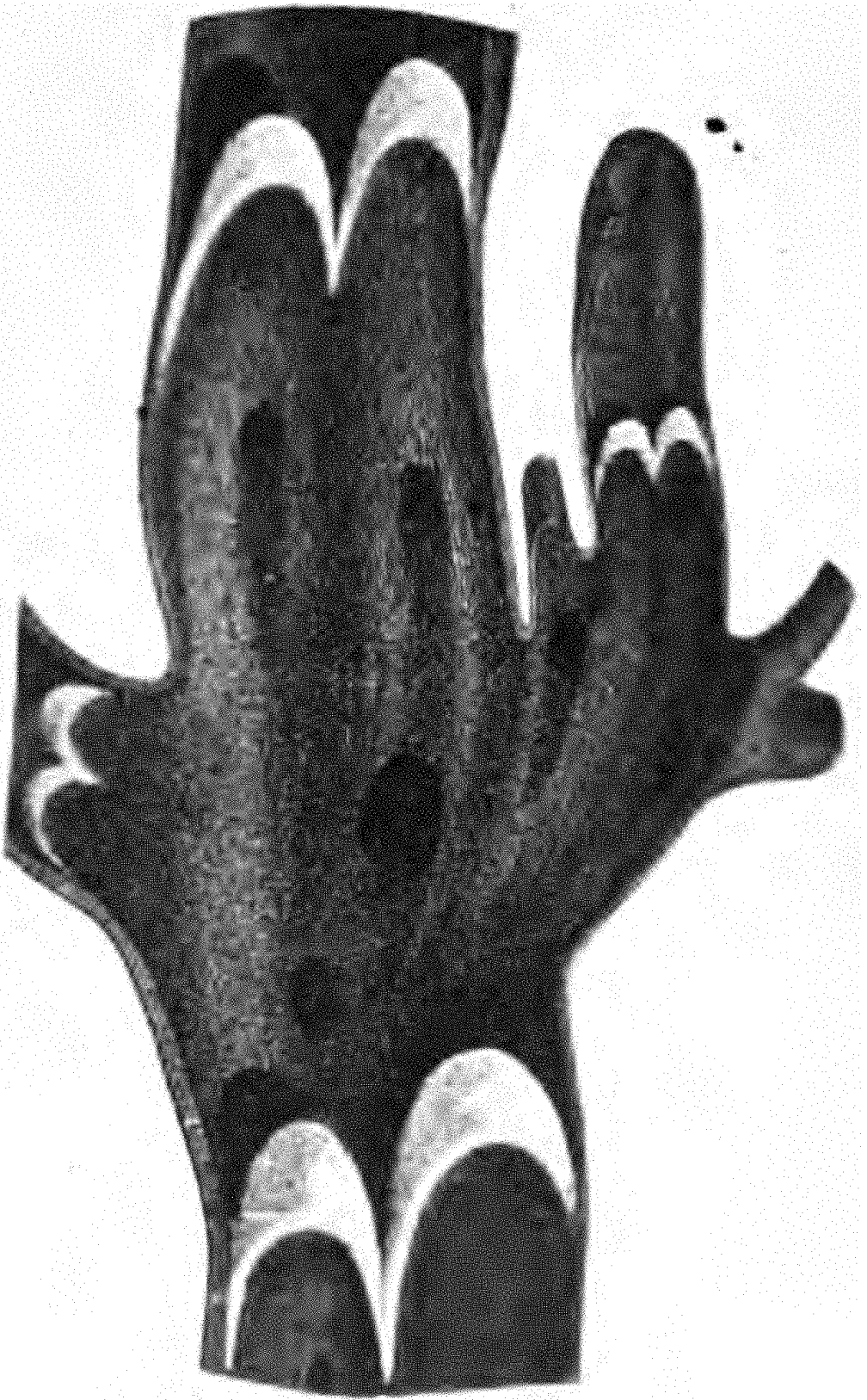
To properly wash the colon, at least four or five quarts of water are necessary, for the largest intestine is five feet in length, and when distended is fully three inches in diameter.

The proper appliance for cleaning the colon, or the large intestine, is a rubber water bag, with a capacity of five quarts, to which the injection pipe, or point, is attached at the center. The weight of the body forces the water into, and cleanses, the colon without the slightest physical effort. The time occupied in this operation is about fifteen minutes. It is the simplest and most effective appliance for this purpose yet invented, and is an important factor in my system of physical rejuvenation. I strongly advise its use at least once a week. It is called “The Cascade”, and is for

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sale by the Tyrrell Hygienic Institute, 1562 Broadway, New York. I cheerfully give the appliance this endorsement in return for the benefits I have derived from its use.

The importance of keeping this large intestine clear of obstruction is easily apparent. It is the receptacle for the waste matter of the system, and may be termed the sewer of the body. If it is allowed to become clogged with faecal matter, as is the case in constipation, it becomes the incubating ground of disease-breeding germs, and the source of all manner of diseases and complications, which would not occur if it were kept properly clean. Physic is but a poor method of attaining the end. The internal bath, by the process described, is the only logical, simple, and effective method by which it can be accomplished. To those who read this book and adopt my system of exercises, I strongly urge its practice, at least once a week, though twice a week is better.



Valves of the Veins

Varicose Veins in the Legs — the Cause and the Cure

As we advance in years a distention of portions of the large veins in the legs is apt to appear. This is especially noticeable in the case of persons whose occupation necessitates a standing position, with little chance for exercise. Clerks, book-keepers, and workers at “the bench” in the different trades principally are the sufferers. This quiescent upright position produces stagnation of the blood in the legs; hence pressure and a steady strain upon the walls of the venous system at that point. Result, a permanent distention, or “varicose veins.”

In youth, if a change of occupation is made, this affliction may disappear, but if the trouble ensues in or after middle age a cure by any lotion or other medicinal remedy is impossible.

It is true that a surgical operation will effect a cure, but that method of relief is expensive and painful, and will necessitate a discontinuance of occupation during the healing process. Temporary relief can be obtained by the use of an

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elastic stocking, but without this support a continuance of the occupation and position which caused the trouble will surely induce its return.

The first indication of a varicose vein is a dull, aching pain. The vein becomes much larger, knotted, and distended; in extreme cases a rupture of the wall sometimes follows. This is infrequent, but always possible.

In the clinical report of my physical condition made by Doctor Carl Renz, February 5, 1895, which appears in the first pages of this book, he notes "varicose vein upon the inside of the right leg (uses an elastic stocking)". This affliction is a common one, is always annoying, and, writing from personal experience, often extremely painful.

It appeared when I had reached my fortieth year and annoyed me for eighteen years thereafter. I relieved myself of the trouble by the persistent practice of the simple exercise or method which I shall describe.

But first, to understand this method of cure, it is necessary to acquaint yourself with the structure of the weakened vein. You will then readily comprehend why the exercise I practice and advise is beneficial. The following brief descrip-



Varicose Veins

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tion of the venous system is a summary of a long chapter upon this subject taken from the standard text book—Gray's Anatomy. I have omitted the technical and scientific terms that the description may be readily understood by the average reader.

The veins are the vessels which serve to return the blood from the capillaries of the different parts of the body to the heart. The veins are found in nearly every tissue of the body. They are larger and altogether more numerous than the arteries; hence the entire capacity of the venous system is much greater than the arterial. The veins are not quite as cylindrical as the arteries, which are more dense in structure, stronger, more elastic, and preserve their cylindrical form when empty.

The veins have not this property, and collapse when not filled with blood. They have thinner walls than the arteries and are not so well supplied with muscular fibre; hence they are more liable to distention at any part where stagnation is liable to occur. All of the larger veins are provided with valves. Their shape and position are shown in the accompanying illustration. These valves serve to prevent the reflux of the blood.

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They are attached by their convex edges to the walls of the veins. Their concave margins are free and directed in the course of the venous current. They lie in close apposition with the wall of the vein as long as the current of blood takes its natural course. If, however, any stagnation or regurgitation occurs, the valves at that place become distorted, their opposed edges are brought into contact, the current is intercepted, and a distention of the wall of the vein ensues, which distention we know as that very painful affliction, a varicose vein.

As the primal cause of the trouble is stagnation of the blood at the point, acceleration of the circulation there would relieve that congestion; and the only way this can be effected is by friction. The most effective method for accomplishing this is with the dry palm of the hand, and the most convenient time and place is the same as in the other exercises I have described—in bed, and in the early morning. The conditions are then favorable, as the system is relaxed and will readily respond to intelligently directed efforts towards its rejuvenation or improvement.

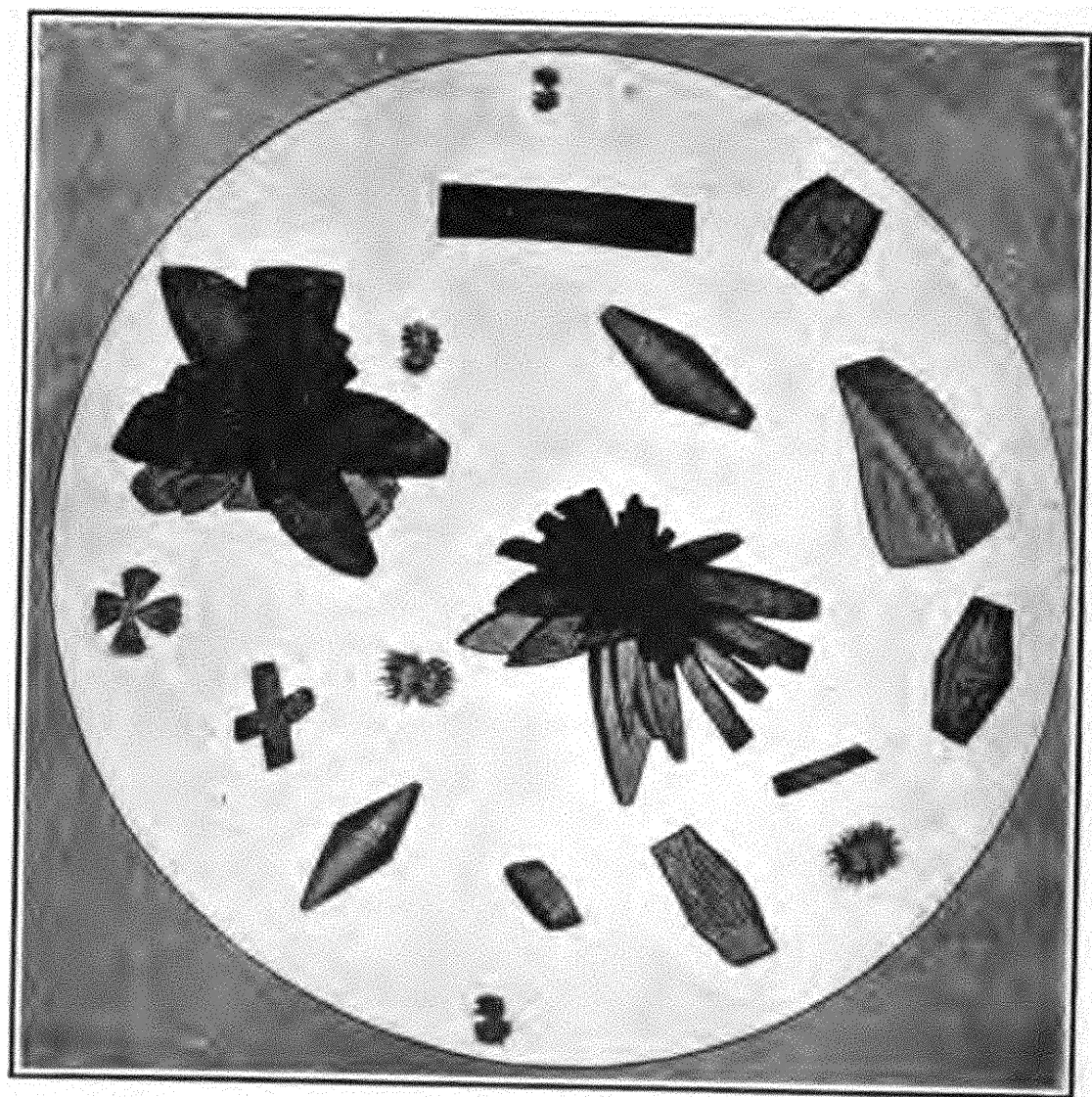
The trouble will most probably appear upon the inside of the leg below the knee, running

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along the calf of the leg, but it may extend several inches above the knee and along the inside of the thigh. With increased years the congestion or distention of the superficial veins will extend lower down, immediately above and around the ankle. This may become discolored and assume a deep bluish hue because of the stagnant blood.

Relief is obtained by friction, with the palm of the hand, daily and persistently. This exercise will relieve the congestion, strengthen the minute muscles that support the venous walls, and if persisted in systematically and methodically, will finally restore the distorted venous valves to their proper position (see anatomical illustration facing page 253), when the trouble will disappear. It is a simple, easy, and effective remedy for a very annoying affliction. I speak from personal experience.

The most convenient position is lying upon your side. Commence with twenty strokes of the hand up and down, following the course of the vein, increasing as the skin becomes hardened and accustomed to the friction, to one hundred strokes. If persisted in, a cure is ultimately sure, in any ordinary case.



Uric Acid Crystals

Rheumatism

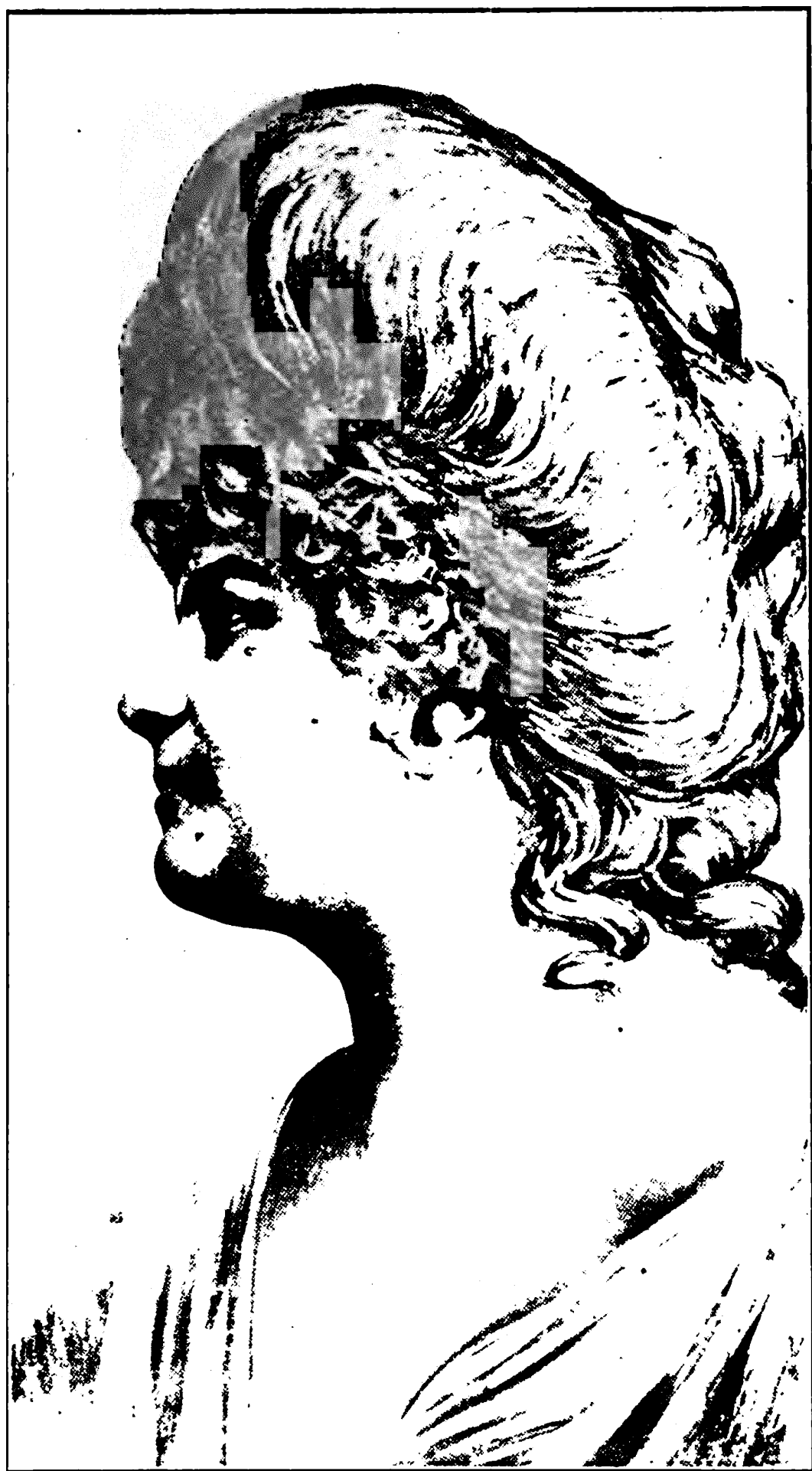
To those who have a tendency to acid rheumatism the methods I have described of eliminating the worn-out, or dead, matter from the system, are of great benefit. By this process of systematically exercising *all the muscles of the body by alternate contractions and relaxations*, the uric acid which is the basic cause of the trouble, and which the kidneys have failed to eliminate, finds no place of permanent lodgment. It is compelled, by the persistent agitation, to "move on," and is expelled by the natural excretions of the body before it has found time and place to settle and form into the minute crystals, which, like so many splinters, are the cause of the acute pains characteristic of the disease.

Rheumatism has been termed "the disease of age". This is not altogether true, for, while it must be admitted, that as we advance in years it is ever to be dreaded, to think that it is the inevitable disease of age is an error. It should be termed, rather, the disease of inaction and consequently disordered digestion.

The remedy is systematic muscular activity. In

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this way it is possible to eliminate from the system the cause of the disease. The simplest, most effective, and easiest method is described in these pages. I know from my own experience, and the experience of those who have followed my example, that this system of exercising every muscle of the body will surely prevent this most painful ailment; and, when it is not too far advanced, will effect a cure which may not be possible by the drug method.



Ninon de L'Enclos

"The Woman Who Never Grew Old"

The remarkable woman whose portrait appears upon the opposite page was born in Paris May 15, 1616; died in Paris October 17, 1706. She was a convincing and well authenticated example of the truth of the system of facial and physical preservation and rejuvenation as described in this book.

Several of the simple methods of preventing and removing wrinkles, filling up hollow cheeks, rounding the chin and one of the exercises I practice for the development of the muscles of the throat have been evolved from hints obtained from an old French pamphlet published in 1710, the author, Jeanne Sauval, having been the personal and faithful attendant of Ninon de L'Enclos for almost half of a century.

While that old book has no doubt been used as a means of advertising various creams, face lotions, and other toilet accessories of doubtful value, and which the great French beauty

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probably never heard of, yet the exercises therein meagerly and vaguely described, as if they were of no importance, were the real secret of her unprecedented preservation of apparent youth in advanced years. The metal face mask which her maid states she wore when sleeping undoubtedly was a very effective aid in the preservation of the smoothness of skin and brilliant complexion described in her memoirs. Yet without the development of the muscles of both face and throat the metal mask alone could not have preserved her youthful appearance at the age of seventy, as shown in her portrait herewith presented.

This old portrait from which the engraving was taken is still upon exhibition in a celebrated French gallery. It is by Andre Beauchamps, Anno Domini 1686. Therefore the subject of this chapter at the time of that painting had reached her seventieth year. Those interested in the life and personality of Ninon de L'Enclos will find in the American Cyclopedia, Vol. X, under "Len," a long article in reference to her.

For a more extended account of this extraordinary woman see the "Life and Letters of

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Ninon de L'Enclos," collection and compilation by W. H. Overton, published by the Lion Publishing Co., Chicago, 1903, from which the following extracts are taken:

"Ninon, or Mlle. de L'Enclos, as she was known, was the most remarkable woman that ever lived. For seventy years she held undisputed sway over the hearts of the most distinguished men of France. Louis XIV, when she was 85 years of age, declared that she was the marvel of his reign. Ninon's form was as symmetrical, elegant, and yielding as a willow; her complexion of a dazzling white, with sparkling eyes as black as midnight; her teeth like pearls, her mouth mobile, her smile captivating and resistless. Adorable as she was in youth, so she continued to be until her death at the age of 91. An incredible fact, but so well attested by the greatest and most reliable writers who testify to the truth of it, that there is no reason to doubt."

"Ninon attributed it not to any miracle or natural traits, but to her philosophy (that is, her methods of physical and facial preservation), and declared that any one might exhibit the same peculiarities by following the

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same precepts.” (Which statement I fully indorse.)

It is evident that she taught her intimate friends the arts and exercises by which she preserved her marvelous beauty to extreme old age, as the biography further states:

“We have it on the most undoubted testimony of contemporaneous writers who were intimate with him that one of her dearest friends and followers, Saint Evremond, at the age of 89 years, inspired one of the famous beauties of the English court with an ardent attachment.”

Of the many portraits painted during the long life of Ninon de L'Enclos, the picture here presented seems to be the only profile position now extant, and was evidently intended to exhibit the remarkable preservation of her beautiful neck. The full-face portrait which appears as the frontispiece of her memoirs above quoted is now in the gallery of Baron Alfred de Rothschild, painted by Jean Petitot in 1666. She was then about 50. She was evidently much more slender in her youth, or even at the time when the Jean Petitot portrait was painted (at 50), but there is no indication of

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age in the smooth, round neck and throat, even at three score years and ten.

It is very probable that her luxuriant hair had become gray, as there does not seem to be any effectual method of preventing that mark of age from appearing as we advance in years, but the white powdered hair then fashionable but added to her beauty and youthful appearance..

This picture, with the statements given, is presented as indisputable evidence that if the human body is through life kept free from wornout tissue, dead cells or other clogging matter it will not exhibit what we know as "the signs of age" to a period long past that which we now think to be the physical limit of the appearance of youth.

The Muscles of the Cheeks

As years creep on the cheeks sink in and hollows appear where once they were full and plump. This is due to the shrinking of the supporting muscles, shown in the illustration facing page 195. There are four of these muscles on each side of the face. As we grow older these muscles lose their strength and elasticity, and this change produces the pendant or loose jowl characteristic of age, just as their lessened size is the cause of the hollows in the cheeks. These are voluntary muscles and can be exercised at will, just as you can exercise the muscles of the arms and legs and just as exercise of any part of the body will improve it, so exercise of the muscles of the face will have the same effect. A system or series of movements devised for that purpose has often been described in various essays and books upon the art of becoming beautiful. The method is styled "facial gymnastics, or making faces." It has some merit, and if faithfully and persistently practiced will to a very

Exercising in Bed

considerable extent build up and strengthen the muscles of the face. The objection is that the exercises are very fatiguing and require long practice before satisfactory results can be obtained. Two of these movements have value and I frequently practice them during my regular exercises. The others I regard as superfluous and not worth describing:

Massage Exercise for the Cheek Muscles

In the chapter entitled "Dumbbell Exercise," in combination with massage of the biceps and triceps muscles, reference is made to the discovery of the athlete, C. A. Sampson, author of "Strength," that the pressure of bands or straps tightly fastened around his arms during exercise speedily increased the size of the muscles. In experimenting in this direction and in my endeavors to discover the reason why I found that this pressure during the alternate contraction and relaxation of the muscles produced a congestion of blood to that point, distending the vessels and therefore enlarging the structure.

Acting upon this idea, I devised and very successfully practice the following simple but very effective massage system for developing the cheeks: Lying upon your back, draw up both corners of the mouth toward the eyes. This will bunch the supporting muscles upon the cheek bones immediately under the eyes.

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Place the palms or heels of the hands at this point. Keep the muscles contracted by the exaggerated or fixed smile, and firmly rub. Do not let the hands slip. The result is similar to Sampson's exercising bands. That is, it will speedily enlarge the supporting muscles, thus filling up and rounding the cheeks. Systematically and persistently practice this exercise as you lie in bed and you will surely succeed.

For the effect of this system upon an old face I again call your attention to the photograph which serves as a frontispiece to this book. Twenty years ago, or at the age of 50, my cheeks were hollow. Now at 70 they are full and round, the result of the persistent practice of the exercise described. It will not produce any lines upon your face and will certainly develop the supporting muscles and fill up your cheeks.

Developing the Muscles Covering the Chin and Jaws

The Chin

The cushion of muscles which covers and rounds the chin bone in most cases is involuntary—that is, without practice the muscles are not capable of motion at will. Still they can to a limited extent be contracted upward when the teeth are firmly set. This cushion of muscles is under the same law as those supporting the cheeks, and by vigorous massage with the palms of the hands—when thus contracted will soon respond, and if the chin was ever round and full in youth that condition may be regained to a very considerable extent, and this result will be attained much more rapidly than is the case with the cheek muscles. Why this is so is not altogether clear to me, but it is a fact that sluggish, involuntary muscles do respond more quickly to compulsory activity—that is by firm, deep massage—than those which have been accustomed to activity, either unconsciously or by the direction of the will,

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probably just as improvement is very much more rapid in the first stages of training for any athletic event than it is later on when the tissues have been "fined down."

As an instance of my success in developing the chin muscles I again refer to the portrait illustration used as the frontispiece of this book, calling attention to the full, round chin there shown, and then ask comparison with the same feature in the photograph taken twenty years prior, or at the age of 50. The full-face anatomical plate upon page 195 will show you the position and character of the chin muscles.

The Jaws

By reference to the anatomical plate, side view of the face and neck muscles, opposite page 190, you will notice that the jaws are covered by broad, flat, muscular bands, commencing underneath the jaw bone and running upward toward the cheek bones, to which they are attached. The character of the face is very largely dependent upon the shape of the jaws, and if those covering muscles have shrunk, as they usually do in advanced years, the skin will hang loose over them, giv-

Exercising in Bed

ing the appearance of age. These jaw muscles readily respond and can be developed by deep massage. This should be practiced along the edge of the jaw bone, using the heel of the hand. This treatment will speedily tone up and increase the size of these muscles, thus giving a rounded and more youthful appearance to the lines of the jaws.

Facial Gymnastics---First Exercise

Draw up the corners of the mouth toward the eyes—or in the position of an exaggerated smile. Now drop the chin to its utmost extent. This will place a further tension upon the cheek muscles already contracted by the action of the exaggerated smile. In this position alternately open and close the jaws. This movement will actively exercise and surely strengthen and develop these supporting cheek muscles.

Second Exercise

Contract the muscles of the right side of the face by drawing up the corner of the mouth as far upward toward the right eye as possible. Hold in that position for a few seconds, then relax, repeating the process on the left side. Alternate this exercise with the one above described.

The first movement is much the best. The objection sometimes advanced is that they may cause new lines. After experimenting a long time with these exercises I have not found this to be the case, and they certainly do strengthen the cheek muscles. The most serious objection is that progress is too slow for the system ever to become very popular.

A far better and quicker method is a massage system which I have devised and practice while the cheek muscles are contracted. By this satisfactory results can be obtained in a very short time, and with very little trouble.

First familiarize yourself with the position

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of these cheek muscles. Referring to the anatomical illustration on page 195, you will notice that there are eight long muscles, four on each side. They are attached to the cheek bones immediately below the eyes, from there descending to become attached to the wide muscular band surrounding the mouth. You can contract these cheek muscles at will, this action forming a bunch on the cheek bones under the eyes.

Another very broad and strong muscle underlies these cheek supporting muscles. It, too, is fastened to the cheek bones but, extending downward, is attached along the jaw bone. This may be termed the chewing muscle, and, while it plays an important part in supporting the cheeks and determining their contour, it cannot be contracted or exercised at will, except in the act of chewing. Its action is independent of the cheek muscles, although when they are contracted upward some tension is placed upon it.

In youth these muscles are, or should be, strong, elastic and supporting the tissue and skin overlying them, giving to the cheeks the full, round appearance characteristic of that

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The cushion of muscles which covers and rounds the chin bone in most cases is involuntary—that is, without practice the muscles are not capable of motion at will. Still they can to a limited extent be contracted upward when the teeth are firmly set. This cushion of muscles is under the same law as those supporting the cheeks, and by vigorous massage with the palms of the hands—when thus contracted will soon respond, and if the chin was ever round and full in youth that condition may be regained to a very considerable extent, and this result will be attained much more rapidly than is the case with the cheek muscles. Why this is so is not altogether clear to me, but it is a fact that sluggish, involuntary muscles do respond more quickly to compulsory activity—that is by firm, deep massage—than those which have been accustomed to activity, either unconsciously or by the direction of the will,

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By reference to the anatomical plate, side view of the face and neck muscles, opposite page 190, you will notice that the jaws are covered by broad, flat, muscular bands, commencing underneath the jaw bone and running upward toward the cheek bones, to which they are attached. The character of the face is very largely dependent upon the shape of the jaws, and if those covering muscles have shrunk, as they usually do in advanced years, the skin will hang loose over them, giv-

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Second Exercise

Contract the muscles of the right side of the face by drawing up the corner of the mouth as far upward toward the right eye as possible. Hold in that position for a few seconds, then relax, repeating the process on the left side. Alternate this exercise with the one above described.

The first movement is much the best. The objection sometimes advanced is that they may cause new lines. After experimenting a long time with these exercises I have not found this to be the case, and they certainly do strengthen the cheek muscles. The most serious objection is that progress is too slow for the system ever to become very popular.

A far better and quicker method is a massage system which I have devised and practice while the cheek muscles are contracted. By this satisfactory results can be obtained in a very short time, and with very little trouble.

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Another very broad and strong muscle underlies these cheek supporting muscles. It, too, is fastened to the cheek bones but, extending downward, is attached along the jaw bone. This may be termed the chewing muscle, and, while it plays an important part in supporting the cheeks and determining their contour, it cannot be contracted or exercised at will, except in the act of chewing. Its action is independent of the cheek muscles, although when they are contracted upward some tension is placed upon it.

In youth these muscles are, or should be, strong, elastic and supporting the tissue and skin overlying them, giving to the cheeks the full, round appearance characteristic of that

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period of life. As years advance, through lack of exercise they shrink and lose their former size, strength and elasticity, just as any muscle of the body will do under like conditions. The skin covering, then losing its support, falls into the creases and lines we know as wrinkles.

These are the certain indications of physical age, as they tell the tale of the shrunken muscles underlying. For these wrinkles, wasted chin, and hollow cheeks there can be but one cure, and that is the restoration to the supporting muscles of their former plumpness and strength. If this is not done any efforts toward the eradication of the disfiguring lines and attempts to fill up the hollow cheeks will be futile, all alleged remedies in the way of "skin foods," medical preparations, etc., to the contrary.

It is true that by a system of diet, and especially by drinking copiously of milk, an increase of fatty tissues can be obtained. The face under this dietary regime will become more plump and the surface of the skin smoother, but if the underlying muscles are not developed the face will still present a

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flabby look, the jowl may sag and the appearance of a double chin be more pronounced. These facial indications of physical age are not especially the signs of advanced years, being principally due to lack of exercise of the supporting facial muscles.

During the last five years, or since the publication of my first essays upon the art of physical and facial rejuvenation, I have been constantly experimenting in this direction, hoping to devise some simple, effective and inexpensive method to accomplish this very much desired result, and which could be practiced by one's self. It seemed to me evident that the secret lay in developing the supporting muscles by exercise. The facial gymnastics described did help, but, as stated, I found them much too slow in results.

Facial massage as usually practiced is superficial. It certainly freshens up the skin, but it does not and cannot develop these deep-seated supporting muscles. Muscular activity, directed by your own will, can alone accomplish this. And that is a matter which must be performed by yourself. Here the pauper and the millionaire are upon an

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equality. No one can exercise for you, nor can any amount of rubbing by an attendant accomplish the beneficial results which may be obtained by your own efforts.

The apparent explanation of the speedy enlargement of the muscles if “deep massaged” when they are contracted, would seem to be, that the network of blood vessels and myriads of capillaries which thread all structures of the body become distended by blood and lymph forced there when the muscles are contracted and vigorously rubbed, this distension accounting for the rapid but at first temporary increase in size of the muscles so treated. The effect may be termed a healthy congestion, as no evil ever results; and by persistent practice this temporary enlargement becomes permanent, the cheeks then assuming and retaining the full, round appearance characteristic of youth.

I do not claim that large muscles produced by this method indicate great strength, but as a means of speedily filling up the cheeks, rounding out the chin and the muscles covering the jaws, no other method yet devised will at all compare to it in efficiency.

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There may be another or additional cause for the sometimes remarkable and speedy increase in the size of muscles so treated. That is to say, independent of the effect produced by distending the blood vessels through the forced increase of blood and lymph. In the chapter upon the effect of the will in exercise several instances are cited of effects obtained by mental concentration, these results being at variance with our knowledge of physiological laws.

Following this train of thought I suggest that it is very probable the concentration of thought or will in this act of contracting the muscles you are endeavoring to develop has a good deal to do with your success in that direction. Without further comment or speculations upon the scientific reasons why, I present the theory for the consideration of the reader.

Developing the Muscles of the Throat---Third Exercise

It is impossible to present a youthful appearance, if the throat is marred by loose hanging skin. The face may be free from wrinkles, but if the muscles which support the overlying skin which covers the throat (i. e., immediately below and between the jaws) are shrunken, an appearance of age is inevitable. Therefore, in my efforts at general physical rejuvenation I have endeavored to devise special exercises for the development of the throat and neck muscles. In this direction I have obtained several valuable ideas from a careful study of the methods practiced by Ninon de L'Enclos. The old French pamphlet to which I have previously referred was not altogether clear upon this subject, the description being vague, but evidently the French woman exercised her neck and throat by throwing her head backward, in the position shown in the anatomical plate (page 189). But as the old book stated that

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she practiced these movements before a mirror, she evidently did so either standing or sitting. Therefore, the head being supported by the shoulders in both of these positions, the advantage of its weight in the exercises would be lost. I found that by placing a pillow under my shoulders as I lay upon my back and then throwing the head backward as far as possible (that is, alternately backward and forward), a much greater strain could be placed upon the throat muscles as well as the large ones at the back of the neck. The development in this way would be much more rapid than by the method of the French beauty.

The illustration which accompanies this description will make the position clear. This method of exercising the muscles in question is also less fatiguing than when practiced in an upright position. There is also another advantage. The action of raising the head in the forward motion contracts the abdominal muscles, which relax as the head is dropped back again. This alternate contraction and relaxation is an excellent exercise for these muscles and has a very beneficial effect upon the digestive organs.

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Massage Exercise for the Cheek Muscles

In the chapter entitled "Dumbbell Exercise," in combination with massage of the biceps and triceps muscles, reference is made to the discovery of the athlete, C. A. Sampson, author of "Strength," that the pressure of bands or straps tightly fastened around his arms during exercise speedily increased the size of the muscles. In experimenting in this direction and in my endeavors to discover the reason why I found that this pressure during the alternate contraction and relaxation of the muscles produced a congestion of blood to that point, distending the vessels and therefore enlarging the structure.

Acting upon this idea, I devised and very successfully practice the following simple but very effective massage system for developing the cheeks: Lying upon your back, draw up both corners of the mouth toward the eyes. This will bunch the supporting muscles upon the cheek bones immediately under the eyes.

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Place the palms or heels of the hands at this point. Keep the muscles contracted by the exaggerated or fixed smile, and firmly rub. Do not let the hands slip. The result is similar to Sampson's exercising bands. That is, it will speedily enlarge the supporting muscles, thus filling up and rounding the cheeks. Systematically and persistently practice this exercise as you lie in bed and you will surely succeed.

For the effect of this system upon an old face I again call your attention to the photograph which serves as a frontispiece to this book. Twenty years ago, or at the age of 50, my cheeks were hollow. Now at 70 they are full and round, the result of the persistent practice of the exercise described. It will not produce any lines upon your face and will certainly develop the supporting muscles and fill up your cheeks.

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The Muscles of the Cheeks

As years creep on the cheeks sink in and hollows appear where once they were full and plump. This is due to the shrinking of the supporting muscles, shown in the illustration facing page 195. There are four of these muscles on each side of the face. As we grow older these muscles lose their strength and elasticity, and this change produces the pendant or loose jowl characteristic of age, just as their lessened size is the cause of the hollows in the cheeks. These are voluntary muscles and can be exercised at will, just as you can exercise the muscles of the arms and legs and just as exercise of any part of the body will improve it, so exercise of the muscles of the face will have the same effect. A system or series of movements devised for that purpose has often been described in various essays and books upon the art of becoming beautiful. The method is styled "facial gymnastics, or making faces." It has some merit, and if faithfully and persistently practiced will to a very

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considerable extent build up and strengthen the muscles of the face. The objection is that the exercises are very fatiguing and require long practice before satisfactory results can be obtained. Two of these movements have value and I frequently practice them during my regular exercises. The others I regard as superfluous and not worth describing:

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Second Exercise

Contract the muscles of the right side of the face by drawing up the corner of the mouth as far upward toward the right eye as possible. Hold in that position for a few seconds, then relax, repeating the process on the left side. Alternate this exercise with the one above described.

The first movement is much the best. The objection sometimes advanced is that they may cause new lines. After experimenting a long time with these exercises I have not found this to be the case, and they certainly do strengthen the cheek muscles. The most serious objection is that progress is too slow for the system ever to become very popular.

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Exercising in Bed

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For the effect of this system upon an old face I again call your attention to the photograph which serves as a frontispiece to this book. Twenty years ago, or at the age of 50, my cheeks were hollow. Now at 70 they are full and round, the result of the persistent practice of the exercise described. It will not produce any lines upon your face and will certainly develop the supporting muscles and fill up your cheeks.

Developing the Muscles Covering the Chin and Jaws

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The cushion of muscles which covers and rounds the chin bone in most cases is involuntary—that is, without practice the muscles are not capable of motion at will. Still they can to a limited extent be contracted upward when the teeth are firmly set. This cushion of muscles is under the same law as those supporting the cheeks, and by vigorous massage with the palms of the hands—when thus contracted will soon respond, and if the chin was ever round and full in youth that condition may be regained to a very considerable extent, and this result will be attained much more rapidly than is the case with the cheek muscles. Why this is so is not altogether clear to me, but it is a fact that sluggish, involuntary muscles do respond more quickly to compulsory activity—that is by firm, deep massage—than those which have been accustomed to activity, either unconsciously or by the direction of the will,

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Facial Gymnastics---First Exercise

Draw up the corners of the mouth toward the eyes—or in the position of an exaggerated smile. Now drop the chin to its utmost extent. This will place a further tension upon the cheek muscles already contracted by the action of the exaggerated smile. In this position alternately open and close the jaws. This movement will actively exercise and surely strengthen and develop these supporting cheek muscles.

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Second Exercise

Contract the muscles of the right side of the face by drawing up the corner of the mouth as far upward toward the right eye as possible. Hold in that position for a few seconds, then relax, repeating the process on the left side. Alternate this exercise with the one above described.

The first movement is much the best. The objection sometimes advanced is that they may cause new lines. After experimenting a long time with these exercises I have not found this to be the case, and they certainly do strengthen the cheek muscles. The most serious objection is that progress is too slow for the system ever to become very popular.

A far better and quicker method is a massage system which I have devised and practice while the cheek muscles are contracted. By this satisfactory results can be obtained in a very short time, and with very little trouble.

First familiarize yourself with the position

Exercising in Bed

of these cheek muscles. Referring to the anatomical illustration on page 195, you will notice that there are eight long muscles, four on each side. They are attached to the cheek bones immediately below the eyes, from there descending to become attached to the wide muscular band surrounding the mouth. You can contract these cheek muscles at will, this action forming a bunch on the cheek bones under the eyes.

Another very broad and strong muscle underlies these cheek supporting muscles. It, too, is fastened to the cheek bones but, extending downward, is attached along the jaw bone. This may be termed the chewing muscle, and, while it plays an important part in supporting the cheeks and determining their contour, it cannot be contracted or exercised at will, except in the act of chewing. Its action is independent of the cheek muscles, although when they are contracted upward some tension is placed upon it.

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This picture, with the statements given, is presented as indisputable evidence that if the human body is through life kept free from wornout tissue, dead cells or other clogging matter it will not exhibit what we know as "the signs of age" to a period long past that which we now think to be the physical limit of the appearance of youth.

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Ninon de L'Enclos

"The Woman Who Never Grew Old"

The remarkable woman whose portrait appears upon the opposite page was born in Paris May 15, 1616; died in Paris October 17, 1706. She was a convincing and well authenticated example of the truth of the system of facial and physical preservation and rejuvenation as described in this book.

Several of the simple methods of preventing and removing wrinkles, filling up hollow cheeks, rounding the chin and one of the exercises I practice for the development of the muscles of the throat have been evolved from hints obtained from an old French pamphlet published in 1710, the author, Jeanne Sauval, having been the personal and faithful attendant of Ninon de L'Enclos for almost half of a century.

While that old book has no doubt been used as a means of advertising various creams, face lotions, and other toilet accessories of doubtful value, and which the great French beauty

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probably never heard of, yet the exercises therein meagerly and vaguely described, as if they were of no importance, were the real secret of her unprecedented preservation of apparent youth in advanced years. The metal face mask which her maid states she wore when sleeping undoubtedly was a very effective aid in the preservation of the smoothness of skin and brilliant complexion described in her memoirs. Yet without the development of the muscles of both face and throat the metal mask alone could not have preserved her youthful appearance at the age of seventy, as shown in her portrait herewith presented.

This old portrait from which the engraving was taken is still upon exhibition in a celebrated French gallery. It is by Andre Beauchamps, Anno Domini 1686. Therefore the subject of this chapter at the time of that painting had reached her seventieth year. Those interested in the life and personality of Ninon de L'Enclos will find in the American Cyclopedia, Vol. X, under "Len," a long article in reference to her.

For a more extended account of this extraordinary woman see the "Life and Letters of

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Ninon de L'Enclos," collection and compilation by W. H. Overton, published by the Lion Publishing Co., Chicago, 1903, from which the following extracts are taken:

"Ninon, or Mlle. de L'Enclos, as she was known, was the most remarkable woman that ever lived. For seventy years she held undisputed sway over the hearts of the most distinguished men of France. Louis XIV, when she was 85 years of age, declared that she was the marvel of his reign. Ninon's form was as symmetrical, elegant, and yielding as a willow; her complexion of a dazzling white, with sparkling eyes as black as midnight; her teeth like pearls, her mouth mobile, her smile captivating and resistless. Adorable as she was in youth, so she continued to be until her death at the age of 91. An incredible fact, but so well attested by the greatest and most reliable writers who testify to the truth of it, that there is no reason to doubt."

"Ninon attributed it not to any miracle or natural traits, but to her philosophy (that is, her methods of physical and facial preservation), and declared that any one might exhibit the same peculiarities by following the

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same precepts.” (Which statement I fully indorse.)

It is evident that she taught her intimate friends the arts and exercises by which she preserved her marvelous beauty to extreme old age, as the biography further states:

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Place the palms or heels of the hands at this point. Keep the muscles contracted by the exaggerated or fixed smile, and firmly rub. Do not let the hands slip. The result is similar to Sampson's exercising bands. That is, it will speedily enlarge the supporting muscles, thus filling up and rounding the cheeks. Systematically and persistently practice this exercise as you lie in bed and you will surely succeed.

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Developing the Muscles Covering the Chin and Jaws

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Second Exercise

Contract the muscles of the right side of the face by drawing up the corner of the mouth as far upward toward the right eye as possible. Hold in that position for a few seconds, then relax, repeating the process on the left side. Alternate this exercise with the one above described.

The first movement is much the best. The objection sometimes advanced is that they may cause new lines. After experimenting a long time with these exercises I have not found this to be the case, and they certainly do strengthen the cheek muscles. The most serious objection is that progress is too slow for the system ever to become very popular.

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For the effect of this system upon an old face I again call your attention to the photograph which serves as a frontispiece to this book. Twenty years ago, or at the age of 50, my cheeks were hollow. Now at 70 they are full and round, the result of the persistent practice of the exercise described. It will not produce any lines upon your face and will certainly develop the supporting muscles and fill up your cheeks.

Developing the Muscles Covering the Chin and Jaws

The Chin

The cushion of muscles which covers and rounds the chin bone in most cases is involuntary—that is, without practice the muscles are not capable of motion at will. Still they can to a limited extent be contracted upward when the teeth are firmly set. This cushion of muscles is under the same law as those supporting the cheeks, and by vigorous massage with the palms of the hands—when thus contracted will soon respond, and if the chin was ever round and full in youth that condition may be regained to a very considerable extent, and this result will be attained much more rapidly than is the case with the cheek muscles. Why this is so is not altogether clear to me, but it is a fact that sluggish, involuntary muscles do respond more quickly to compulsory activity—that is by firm, deep massage—than those which have been accustomed to activity, either unconsciously or by the direction of the will,

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Second Exercise

Contract the muscles of the right side of the face by drawing up the corner of the mouth as far upward toward the right eye as possible. Hold in that position for a few seconds, then relax, repeating the process on the left side. Alternate this exercise with the one above described.

The first movement is much the best. The objection sometimes advanced is that they may cause new lines. After experimenting a long time with these exercises I have not found this to be the case, and they certainly do strengthen the cheek muscles. The most serious objection is that progress is too slow for the system ever to become very popular.

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The apparent explanation of the speedy enlargement of the muscles if "deep massaged" when they are contracted, would seem to be, that the network of blood vessels and myriads of capillaries which thread all structures of the body become distended by blood and lymph forced there when the muscles are contracted and vigorously rubbed, this distension accounting for the rapid but at first temporary increase in size of the muscles so treated. The effect may be termed a healthy congestion, as no evil ever results; and by persistent practice this temporary enlargement becomes permanent, the cheeks then assuming and retaining the full, round appearance characteristic of youth.

I do not claim that large muscles produced by this method indicate great strength, but as a means of speedily filling up the cheeks, rounding out the chin and the muscles covering the jaws, no other method yet devised will at all compare to it in efficiency.

Exercising in Bed

There may be another or additional cause for the sometimes remarkable and speedy increase in the size of muscles so treated. That is to say, independent of the effect produced by distending the blood vessels through the forced increase of blood and lymph. In the chapter upon the effect of the will in exercise several instances are cited of effects obtained by mental concentration, these results being at variance with our knowledge of physiological laws.

Following this train of thought I suggest that it is very probable the concentration of thought or will in this act of contracting the muscles you are endeavoring to develop has a good deal to do with your success in that direction. Without further comment or speculations upon the scientific reasons why, I present the theory for the consideration of the reader.

Developing the Muscles of the Throat---Third Exercise

It is impossible to present a youthful appearance, if the throat is marred' by loose hanging skin. The face may be free from wrinkles, but if the muscles which support the overlying skin which covers the throat (i. e., immediately below and between the jaws) are shrunken, an appearance of age is inevitable. Therefore, in my efforts at general physical rejuvenation I have endeavored to devise special exercises for the development' of the throat and neck muscles. In this direction I have obtained several valuable ideas from a careful study of the methods practiced by Ninon de L'Enclos. The old French pamphlet to which I have previously referred was not altogether clear upon this subject, the description being vague, but evidently the French woman exercised her neck and throat by throwing her head backward, in the position shown in the anatomical plate (page 189). But as the old book stated that

Exercising in Bed

she practiced these movements before a mirror, she evidently did so either standing or sitting. Therefore, the head being supported by the shoulders in both of these positions, the advantage of its weight in the exercises would be lost. I found that by placing a pillow under my shoulders as I lay upon my back and then throwing the head backward as far as possible (that is, alternately backward and forward), a much greater strain could be placed upon the throat muscles as well as the large ones at the back of the neck. The development in this way would be much more rapid than by the method of the French beauty.

The illustration which accompanies this description will make the position clear. This method of exercising the muscles in question is also less fatiguing than when practiced in an upright position. There is also another advantage. The action of raising the head in the forward motion contracts the abdominal muscles, which relax as the head is dropped back again. This alternate contraction and relaxation is an excellent exercise for these muscles and has a very beneficial effect upon the digestive organs.

Exercising in Bed

Commence slowly, and if any feeling of dizziness results from the unaccustomed activity and position limit your first trials to, say, five movements, but very soon you can attain 100 or more with ease—that is, throwing the head backward as far as possible and then bringing it forward. This is the most effective exercise which can be devised for the purpose described, and if you are really and thoroughly in earnest, and will faithfully and systematically practice the movements which I have described, you will surely strengthen and round out the neck, and as the muscles of the throat enlarge and the skin overlying them is properly supported, the disfiguring bags will surely disappear.

If the throat is too fat and full—that is, if that *bete noir* of beauty, the double chin, has appeared—this exercise will speedily reduce it. The round full throat and symmetrical neck of the celebrated French beauty at the age of 70, as shown in her portrait, is a convincing demonstration of the value of these throat and neck exercises. Most probably she never allowed the disfiguring double chin to appear, as she commenced these exercises

Exercising in Bed

when physical youth was still hers and continued them throughout her long life. She was able by these means to retain the youthful contour of her beautiful neck and throat to the end.

In my own case I did not commence these special exercises until I was over 50. You will notice that the loose hanging skin at the throat is very marked at that age (see photograph on first page), while my profile photograph upon page 174 will demonstrate my success at three score years and ten.

To all women who value their personal appearance I earnestly advise the practice of these three neck and throat exercises. They are the solution of a problem which has puzzled the sex in all ages.

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During the last five years, or since the publication of my first essays upon the art of physical and facial rejuvenation, I have been constantly experimenting in this direction, hoping to devise some simple, effective and inexpensive method to accomplish this very much desired result, and which could be practiced by one's self. It seemed to me evident that the secret lay in developing the supporting muscles by exercise. The facial gymnastics described did help, but, as stated, I found them much too slow in results.

Facial massage as usually practiced is superficial. It certainly freshens up the skin, but it does not and cannot develop these deep-seated supporting muscles. Muscular activity, directed by your own will, can alone accomplish this. And that is a matter which must be performed by yourself. Here the pauper and the millionaire are upon an

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Place the palms or heels of the hands at this point. Keep the muscles contracted by the exaggerated or fixed smile, and firmly rub. Do not let the hands slip. The result is similar to Sampson's exercising bands. That is, it will speedily enlarge the supporting muscles, thus filling up and rounding the cheeks. Systematically and persistently practice this exercise as you lie in bed and you will surely succeed.

For the effect of this system upon an old face I again call your attention to the photograph which serves as a frontispiece to this book. Twenty years ago, or at the age of 50, my cheeks were hollow. Now at 70 they are full and round, the result of the persistent practice of the exercise described. It will not produce any lines upon your face and will certainly develop the supporting muscles and fill up your cheeks.

Developing the Muscles Covering the Chin and Jaws

The Chin

The cushion of muscles which covers and rounds the chin bone in most cases is involuntary—that is, without practice the muscles are not capable of motion at will. Still they can to a limited extent be contracted upward when the teeth are firmly set. This cushion of muscles is under the same law as those supporting the cheeks, and by vigorous massage with the palms of the hands—when thus contracted will soon respond, and if the chin was ever round and full in youth that condition may be regained to a very considerable extent, and this result will be attained much more rapidly than is the case with the cheek muscles. Why this is so is not altogether clear to me, but it is a fact that sluggish, involuntary muscles do respond more quickly to compulsory activity—that is by firm, deep massage—than those which have been accustomed to activity, either unconsciously or by the direction of the will,

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Second Exercise

Contract the muscles of the right side of the face by drawing up the corner of the mouth as far upward toward the right eye as possible. Hold in that position for a few seconds, then relax, repeating the process on the left side. Alternate this exercise with the one above described.

The first movement is much the best. The objection sometimes advanced is that they may cause new lines. After experimenting a long time with these exercises I have not found this to be the case, and they certainly do strengthen the cheek muscles. The most serious objection is that progress is too slow for the system ever to become very popular.

A far better and quicker method is a massage system which I have devised and practice while the cheek muscles are contracted. By this satisfactory results can be obtained in a very short time, and with very little trouble.

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Another very broad and strong muscle underlies these cheek supporting muscles. It, too, is fastened to the cheek bones but, extending downward, is attached along the jaw bone. This may be termed the chewing muscle, and, while it plays an important part in supporting the cheeks and determining their contour, it cannot be contracted or exercised at will, except in the act of chewing. Its action is independent of the cheek muscles, although when they are contracted upward some tension is placed upon it.

In youth these muscles are, or should be, strong, elastic and supporting the tissue and skin overlying them, giving to the cheeks the full, round appearance characteristic of that

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period of life. As years advance, through lack of exercise they shrink and lose their former size, strength and elasticity, just as any muscle of the body will do under like conditions. The skin covering, then losing its support, falls into the creases and lines we know as wrinkles.

These are the certain indications of physical age, as they tell the tale of the shrunken muscles underlying. For these wrinkles, wasted chin, and hollow cheeks there can be but one cure, and that is the restoration to the supporting muscles of their former plumpness and strength. If this is not done any efforts toward the eradication of the disfiguring lines and attempts to fill up the hollow cheeks will be futile, all alleged remedies in the way of "skin foods," medical preparations, etc., to the contrary.

It is true that by a system of diet, and especially by drinking copiously of milk, an increase of fatty tissues can be obtained. The face under this dietary regime will become more plump and the surface of the skin smoother, but if the underlying muscles are not developed the face will still present a

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equality. No one can exercise for you, nor can any amount of rubbing by an attendant accomplish the beneficial results which may be obtained by your own efforts.

The apparent explanation of the speedy enlargement of the muscles if "deep massaged" when they are contracted, would seem to be, that the network of blood vessels and myriads of capillaries which thread all structures of the body become distended by blood and lymph forced there when the muscles are contracted and vigorously rubbed, this distension accounting for the rapid but at first temporary increase in size of the muscles so treated. The effect may be termed a healthy congestion, as no evil ever results; and by persistent practice this temporary enlargement becomes permanent, the cheeks then assuming and retaining the full, round appearance characteristic of youth.

I do not claim that large muscles produced by this method indicate great strength, but as a means of speedily filling up the cheeks, rounding out the chin and the muscles covering the jaws, no other method yet devised will at all compare to it in efficiency.

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There may be another or additional cause for the sometimes remarkable and speedy increase in the size of muscles so treated. That is to say, independent of the effect produced by distending the blood vessels through the forced increase of blood and lymph. In the chapter upon the effect of the will in exercise several instances are cited of effects obtained by mental concentration, these results being at variance with our knowledge of physiological laws.

Following this train of thought I suggest that it is very probable the concentration of thought or will in this act of contracting the muscles you are endeavoring to develop has a good deal to do with your success in that direction. Without further comment or speculations upon the scientific reasons why, I present the theory for the consideration of the reader.

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It is evident that she taught her intimate friends the arts and exercises by which she preserved her marvelous beauty to extreme old age, as the biography further states:

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Of the many portraits painted during the long life of Ninon de L'Enclos, the picture here presented seems to be the only profile position now extant, and was evidently intended to exhibit the remarkable preservation of her beautiful neck. The full-face portrait which appears as the frontispiece of her memoirs above quoted is now in the gallery of Baron Alfred de Rothschild, painted by Jean Petitot in 1666. She was then about 50. She was evidently much more slender in her youth, or even at the time when the Jean Petitot portrait was painted (at 50), but there is no indication of

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The first movement is much the best. The objection sometimes advanced is that they may cause new lines. After experimenting a long time with these exercises I have not found this to be the case, and they certainly do strengthen the cheek muscles. The most serious objection is that progress is too slow for the system ever to become very popular.

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probably never heard of, yet the exercises therein meagerly and vaguely described, as if they were of no importance, were the real secret of her unprecedented preservation of apparent youth in advanced years. The metal face mask which her maid states she wore when sleeping undoubtedly was a very effective aid in the preservation of the smoothness of skin and brilliant complexion described in her memoirs. Yet without the development of the muscles of both face and throat the metal mask alone could not have preserved her youthful appearance at the age of seventy, as shown in her portrait herewith presented.

This old portrait from which the engraving was taken is still upon exhibition in a celebrated French gallery. It is by Andre Beauchamps, Anno Domini 1686. Therefore the subject of this chapter at the time of that painting had reached her seventieth year. Those interested in the life and personality of Ninon de L'Enclos will find in the American Cyclopedia, Vol. X, under "Len," a long article in reference to her.

For a more extended account of this extraordinary woman see the "Life and Letters of

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Ninon de L'Enclos," collection and compilation by W. H. Overton, published by the Lion Publishing Co., Chicago, 1903, from which the following extracts are taken:

"Ninon, or Mlle. de L'Enclos, as she was known, was the most remarkable woman that ever lived. For seventy years she held undisputed sway over the hearts of the most distinguished men of France. Louis XIV, when she was 85 years of age, declared that she was the marvel of his reign. Ninon's form was as symmetrical, elegant, and yielding as a willow; her complexion of a dazzling white, with sparkling eyes as black as midnight; her teeth like pearls, her mouth mobile, her smile captivating and resistless. Adorable as she was in youth, so she continued to be until her death at the age of 91. An incredible fact, but so well attested by the greatest and most reliable writers who testify to the truth of it, that there is no reason to doubt."

"Ninon attributed it not to any miracle or natural traits, but to her philosophy (that is, her methods of physical and facial preservation), and declared that any one might exhibit the same peculiarities by following the

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same precepts.” (Which statement I fully indorse.)

It is evident that she taught her intimate friends the arts and exercises by which she preserved her marvelous beauty to extreme old age, as the biography further states:

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period of life. As years advance, through lack of exercise they shrink and lose their former size, strength and elasticity, just as any muscle of the body will do under like conditions. The skin covering, then losing its support, falls into the creases and lines we know as wrinkles.

These are the certain indications of physical age, as they tell the tale of the shrunken muscles underlying. For these wrinkles, wasted chin, and hollow cheeks there can be but one cure, and that is the restoration to the supporting muscles of their former plumpness and strength. If this is not done any efforts toward the eradication of the disfiguring lines and attempts to fill up the hollow cheeks will be futile, all alleged remedies in the way of "skin foods," medical preparations, etc., to the contrary.

It is true that by a system of diet, and especially by drinking copiously of milk, an increase of fatty tissues can be obtained. The face under this dietary regime will become more plump and the surface of the skin smoother, but if the underlying muscles are not developed the face will still present a

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flabby look, the jowl may sag and the appearance of a double chin be more pronounced. These facial indications of physical age are not especially the signs of advanced years, being principally due to lack of exercise of the supporting facial muscles.

During the last five years, or since the publication of my first essays upon the art of physical and facial rejuvenation, I have been constantly experimenting in this direction, hoping to devise some simple, effective and inexpensive method to accomplish this very much desired result, and which could be practiced by one's self. It seemed to me evident that the secret lay in developing the supporting muscles by exercise. The facial gymnastics described did help, but, as stated, I found them much too slow in results.

Facial massage as usually practiced is superficial. It certainly freshens up the skin, but it does not and cannot develop these deep-seated supporting muscles. Muscular activity, directed by your own will, can alone accomplish this. And that is a matter which must be performed by yourself. Here the pauper and the millionaire are upon an

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equality. No one can exercise for you, nor can any amount of rubbing by an attendant accomplish the beneficial results which may be obtained by your own efforts.

The apparent explanation of the speedy enlargement of the muscles if "deep massaged" when they are contracted, would seem to be, that the network of blood vessels and myriads of capillaries which thread all structures of the body become distended by blood and lymph forced there when the muscles are contracted and vigorously rubbed, this distension accounting for the rapid but at first temporary increase in size of the muscles so treated. The effect may be termed a healthy congestion, as no evil ever results; and by persistent practice this temporary enlargement becomes permanent, the cheeks then assuming and retaining the full, round appearance characteristic of youth.

I do not claim that large muscles produced by this method indicate great strength, but as a means of speedily filling up the cheeks, rounding out the chin and the muscles covering the jaws, no other method yet devised will at all compare to it in efficiency.

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There may be another or additional cause for the sometimes remarkable and speedy increase in the size of muscles so treated. That is to say, independent of the effect produced by distending the blood vessels through the forced increase of blood and lymph. In the chapter upon the effect of the will in exercise several instances are cited of effects obtained by mental concentration, these results being at variance with our knowledge of physiological laws.

Following this train of thought I suggest that it is very probable the concentration of thought or will in this act of contracting the muscles you are endeavoring to develop has a good deal to do with your success in that direction. Without further comment or speculations upon the scientific reasons why, I present the theory for the consideration of the reader.

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First familiarize yourself with the position

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of these cheek muscles. Referring to the anatomical illustration on page 195, you will notice that there are eight long muscles, four on each side. They are attached to the cheek bones immediately below the eyes, from there descending to become attached to the wide muscular band surrounding the mouth. You can contract these cheek muscles at will, this action forming a bunch on the cheek bones under the eyes.

Another very broad and strong muscle underlies these cheek supporting muscles. It, too, is fastened to the cheek bones but, extending downward, is attached along the jaw bone. This may be termed the chewing muscle, and, while it plays an important part in supporting the cheeks and determining their contour, it cannot be contracted or exercised at will, except in the act of chewing. Its action is independent of the cheek muscles, although when they are contracted upward some tension is placed upon it.

In youth these muscles are, or should be, strong, elastic and supporting the tissue and skin overlying them, giving to the cheeks the full, round appearance characteristic of that

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period of life. As years advance, through lack of exercise they shrink and lose their former size, strength and elasticity, just as any muscle of the body will do under like conditions. The skin covering, then losing its support, falls into the creases and lines we know as wrinkles.

These are the certain indications of physical age, as they tell the tale of the shrunken muscles underlying. For these wrinkles, wasted chin, and hollow cheeks there can be but one cure, and that is the restoration to the supporting muscles of their former plumpness and strength. If this is not done any efforts toward the eradication of the disfiguring lines and attempts to fill up the hollow cheeks will be futile, all alleged remedies in the way of "skin foods," medical preparations, etc., to the contrary.

It is true that by a system of diet, and especially by drinking copiously of milk, an increase of fatty tissues can be obtained. The face under this dietary regime will become more plump and the surface of the skin smoother, but if the underlying muscles are not developed the face will still present a

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flabby look, the jowl may sag and the appearance of a double chin be more pronounced. These facial indications of physical age are not especially the signs of advanced years, being principally due to lack of exercise of the supporting facial muscles.

During the last five years, or since the publication of my first essays upon the art of physical and facial rejuvenation, I have been constantly experimenting in this direction, hoping to devise some simple, effective and inexpensive method to accomplish this very much desired result, and which could be practiced by one's self. It seemed to me evident that the secret lay in developing the supporting muscles by exercise. The facial gymnastics described did help, but, as stated, I found them much too slow in results.

Facial massage as usually practiced is superficial. It certainly freshens up the skin, but it does not and cannot develop these deep-seated supporting muscles. Muscular activity, directed by your own will, can alone accomplish this. And that is a matter which must be performed by yourself. Here the pauper and the millionaire are upon an

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equality. No one can exercise for you, nor can any amount of rubbing by an attendant accomplish the beneficial results which may be obtained by your own efforts.

The apparent explanation of the speedy enlargement of the muscles if "deep massaged" when they are contracted, would seem to be, that the network of blood vessels and myriads of capillaries which thread all structures of the body become distended by blood and lymph forced there when the muscles are contracted and vigorously rubbed, this distension accounting for the rapid but at first temporary increase in size of the muscles so treated. The effect may be termed a healthy congestion, as no evil ever results; and by persistent practice this temporary enlargement becomes permanent, the cheeks then assuming and retaining the full, round appearance characteristic of youth.

I do not claim that large muscles produced by this method indicate great strength, but as a means of speedily filling up the cheeks, rounding out the chin and the muscles covering the jaws, no other method yet devised will at all compare to it in efficiency.

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There may be another or additional cause for the sometimes remarkable and speedy increase in the size of muscles so treated. That is to say, independent of the effect produced by distending the blood vessels through the forced increase of blood and lymph. In the chapter upon the effect of the will in exercise several instances are cited of effects obtained by mental concentration, these results being at variance with our knowledge of physiological laws.

Following this train of thought I suggest that it is very probable the concentration of thought or will in this act of contracting the muscles you are endeavoring to develop has a good deal to do with your success in that direction. Without further comment or speculations upon the scientific reasons why, I present the theory for the consideration of the reader.

Developing the Muscles of the Throat---Third Exercise

It is impossible to present a youthful appearance, if the throat is marred by loose hanging skin. The face may be free from wrinkles, but if the muscles which support the overlying skin which covers the throat (i. e., immediately below and between the jaws) are shrunken, an appearance of age is inevitable. Therefore, in my efforts at general physical rejuvenation I have endeavored to devise special exercises for the development of the throat and neck muscles. In this direction I have obtained several valuable ideas from a careful study of the methods practiced by Ninon de L'Enclos. The old French pamphlet to which I have previously referred was not altogether clear upon this subject, the description being vague, but evidently the French woman exercised her neck and throat by throwing her head backward, in the position shown in the anatomical plate (page 189). But as the old book stated that

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she practiced these movements before a mirror, she evidently did so either standing or sitting. Therefore, the head being supported by the shoulders in both of these positions, the advantage of its weight in the exercises would be lost. I found that by placing a pillow under my shoulders as I lay upon my back and then throwing the head backward as far as possible (that is, alternately backward and forward), a much greater strain could be placed upon the throat muscles as well as the large ones at the back of the neck. The development in this way would be much more rapid than by the method of the French beauty.

The illustration which accompanies this description will make the position clear. This method of exercising the muscles in question is also less fatiguing than when practiced in an upright position. There is also another advantage. The action of raising the head in the forward motion contracts the abdominal muscles, which relax as the head is dropped back again. This alternate contraction and relaxation is an excellent exercise for these muscles and has a very beneficial effect upon the digestive organs.

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Commence slowly, and if any feeling of dizziness results from the unaccustomed activity and position limit your first trials to, say, five movements, but very soon you can attain 100 or more with ease—that is, throwing the head backward as far as possible and then bringing it forward. This is the most effective exercise which can be devised for the purpose described, and if you are really and thoroughly in earnest, and will faithfully and systematically practice the movements which I have described, you will surely strengthen and round out the neck, and as the muscles of the throat enlarge and the skin overlying them is properly supported, the disfiguring bags will surely disappear.

If the throat is too fat and full—that is, if that *bete noir* of beauty, the double chin, has appeared—this exercise will speedily reduce it. The round full throat and symmetrical neck of the celebrated French beauty at the age of 70, as shown in her portrait, is a convincing demonstration of the value of these throat and neck exercises. Most probably she never allowed the disfiguring double chin to appear, as she commenced these exercises

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when physical youth was still hers and continued them throughout her long life. She was able by these means to retain the youthful contour of her beautiful neck and throat to the end.

In my own case I did not commence these special exercises until I was over 50. You will notice that the loose hanging skin at the throat is very marked at that age (see photograph on first page), while my profile photograph upon page 174 will demonstrate my success at three score years and ten.

To all women who value their personal appearance I earnestly advise the practice of these three neck and throat exercises. They are the solution of a problem which has puzzled the sex in all ages.

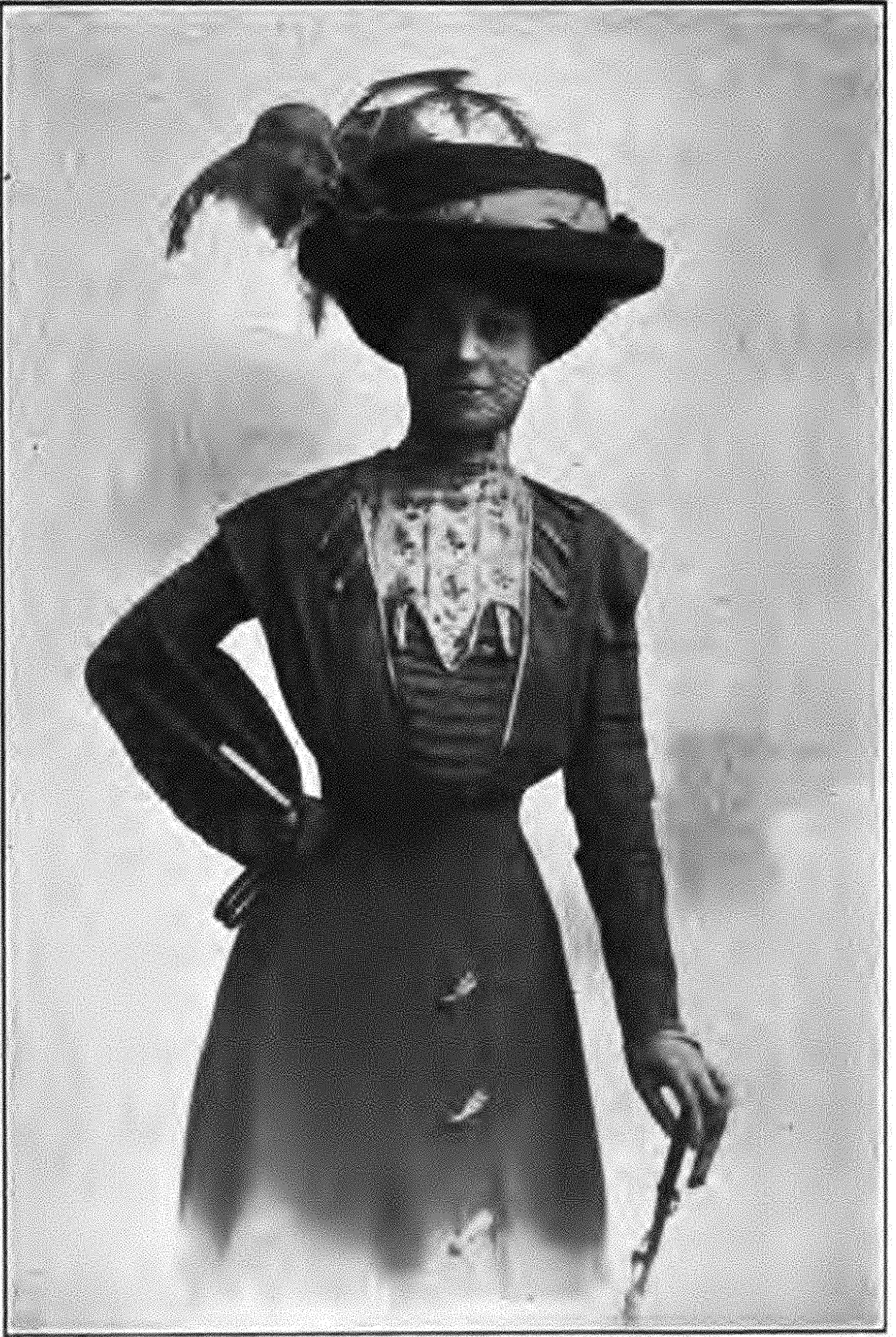
Muscles of the Back of the Neck and the Abdominal Muscles

Lying upon the back, as shown in the illustration, when you raise your head you will find that a tension is placed upon all of the muscles of the neck, but particularly those at the back of the neck. The large, flat muscles which brace up the abdomen are also brought into action.

To exercise and strengthen both of these very important sets of muscles, lie upon your back and alternately raise and lower your head. Five movements will be sufficient to commence with, but as your strength increases ten times that number will not tire you and can do no harm.



July Fifth, 1909



October Twenty-sixth, 1909

Rapid Development of the Supporting Muscles of the Cheeks

The instance here illustrated of rapid facial improvement by the persistent and systematic practice of the exercises described, i. e., for the development of the cheek muscles and those of the chin and jaw, is so remarkable that I have obtained the kind permission of the lady who so successfully practiced them to present for the inspection of the readers of this book two photographs. The first was taken July 5, 1909; the second, October 26, 1909, or three months and twenty-one days later. The exercises were commenced and practiced daily and persistently under my directions, and the result has exceeded all expectations of those directly interested in the experiments. This lady was and still is quite slender. Health and digestion were very considerably improved, but not sufficiently to account for the very great change and improvement in her facial appear-

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ance. The supporting muscles of the cheeks had greatly atrophied, the cheeks were hollow and the chin emaciated. The face as a consequence presented a thin and haggard appearance. First attempts at the exercises were not encouraging. The insufficient covering of the bony structure of the cheeks and chin became quite tender, and a rest of three days was allowed. This condition disappearing, the exercises were again commenced, and thereafter no interruption occurred.

A marked improvement was evident in one month, both cheeks and chin becoming more round and symmetrical, the skin also being much improved. The exercises for the development of the throat muscles were then commenced, but improvement at this point, while satisfactory, was not nearly so rapid as the development of the supporting cheek muscles or those of the chin. The reason of this difference in development was, I think, due to the fact of the throat muscles being less atrophied than those of the cheeks and chin. It is also probable that the neck and throat were always slender. Therefore the apparent difference in rapidity of development.

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I present this case for the encouragement of those wishing to experiment in this direction. While no claim is made that such quick results can always be obtained, that it is possible the lady referred to has fully demonstrated.

The Metal Face Mask

Designed for the Removal of Wrinkles

In the chapter of an old French pamphlet, relating to the celebrated French beauty, Ninon de L'Enclos, mention is made of a metal face mask which she wore at night as a means for the prevention of wrinkles and for the preservation of the smoothness of skin and brilliant complexion for which she was celebrated. The pamphlet, referred to in the brief sketch of her personality, was silent as to how this mask was constructed, but I could readily understand how it was attached to the face and worn, also that such a device would be cleanly and durable, and that if it fitted the contour of the features accurately the even pressure, exclusion of air, and stimulation of the sweat glands which must result would certainly have a very beneficial effect upon the skin and complexion. Her maid, Jeanne Sauval, simply described it as *un masque d'or*, i. e., a gold mask. It was evident that a perfect fit was necessary, as if there was an

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uneven bearing it would be painful and could not be worn when sleeping, as the maid stated was the custom of her mistress.

Feeling assured that the French woman had found the right method, I experimented nearly three years upon that device, being determined to learn how it was constructed. The specialist and the two ladies who kindly assisted in these experiments tried every known variety of mask, hoping to find some less expensive substitute as efficacious as the French beauty's *masque d'or*. The requisites seemed to be about as follows: An even pressure all over the face, material durable and capable of being scalded and polished without injury, thus assuring antiseptic conditions. The surface which rested upon the skin should be hard and smooth, resisting by its even pressure the vibrations of growth, thus producing a kind of natural massage. It should be light and strong and finally not too expensive. These conditions we found to be necessary to success, but a very difficult problem to solve.

We experimented with flannel, kid, celluloid, papier mache, tin, lead, and rubber, find-

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ing them one and all failures. The flannel and kid masks simply kept the face warm and neither whitened the skin nor had any effect upon the wrinkles, the papier mache and celluloid quickly lost shape, tin was a flat failure, and rubber while bleaching the face and admitting the use of face cream to some extent, had no effect upon the wrinkles. It also soon became ill-smelling and impossible.

In the case of one of the ladies, in experimenting with the rubber mask a very troublesome rash appeared, causing apprehensions of some dangerous skin disease. But when a slight accident prevented the fair investigator from wearing the rubber mask for a few nights the eruption quickly disappeared. Accepting Nature's hint, I discarded that form of mask and material. It was evident that the French beauty had the right idea in using gold or possibly a gilding of gold upon the metal used in the construction of her mask, but the expense of such a high-priced material was prohibitive. It seemed evident that her mask was not modeled upon her face, but most probably from a plaster cast taken from it. We therefore had casts made of the ladies'

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faces, and upon these plaster faces we experimented with various metals. These metals were melted and poured upon the plaster models. In this way we obtained several *fac similes* in metal of the original cast, but all were too heavy and cumbersome, which the original *masque d'or* certainly could not have been.

Finally we hit upon the idea of precipitating copper in solution by electricity upon the plaster faces, allowing the deposit to accumulate to about the thickness of pasteboard, the result being a light, strong copper mask, fitting the features in every detail, the pressure being even at all points, no discomfort was felt by the wearers, as the mouth, nostrils and eyes were left free of obstruction, but finding that the contact of copper with the skin had an injurious effect, we plated the mask with silver. However, this speedily tarnished, leaving black stains upon the skin. We then plated with gold, and finally succeeded in producing the veritable *masque d'or* of Ninon de L'Enclos, and probably a far better article than she used. This light, strong and clean device we fastened to the ladies' faces with elastic bands, as shown in the accompanying illustrations.

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The application of a thick coat of face cream aided in the exclusion of the air and softening the skin. The result has been very remarkable, and both of these ladies, as well as others who have tried the device, have had very extraordinary success.

In a case where there was a deficiency of superficial circulation in the skin of the face (and as a consequence great pallor), an electric current from a small portable battery, as shown in the illustration, was applied. The improvement was so pronounced that this was included in our application for patent (which we have obtained and all rights protected), issued in the names of Dr. G. C. Lammers and Sanford Bennett. The first objection to the metal face mask usually offered is that it would be unpleasant to sleep with such a device upon the face, but this is not the case. The metal mask fitting the contour of the features accurately in every detail (as it surely will if the plaster cast is made properly), there is a general even bearing. The warmth generated produces a gentle perspiration which has a soothing effect upon the nerves and induces sleep. After wearing the mask

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two or three hours, or even half of that time, when it is removed the face will be found to be bathed in perspiration. Wipe this off with a dry towel. The skin after this prolonged perspiration bath will be found to be white and smooth and the wrinkles temporarily pressed out.

If the cheeks and chin have been developed by the deep massage exercise described in the chapter relating to those muscles, a very decided improvement in the appearance of the face by the mask alone will quickly result, but the process of facial rejuvenation will be greatly hastened by friction with the palms of the hands and tips of the fingers. Not gentle smoothings with the tips of the fingers, as usually recommended in beauty articles, but rubbing and plenty of it. This should be done immediately after the removal of the mask. The lines have then been temporarily pressed out, the skin has still a slight coating of face cream, and the conditions are then favorable for this friction process. The most convenient position you will find to be as you lie upon your back in bed. The neck should also be treated in the same way as the face, and no

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harm will be done to the skin as long as it does not chafe, a few drops of the face cream applied by the palms of the hands preventing that condition.

This was the logical, practical and successful method of Ninon de L'Enclos. By it she retained a youthful face free from wrinkles and with the appearance of the skin of youth up to the age of 80 years. As success rewarded her efforts, so will success come to anyone who will follow her example. It requires time and patience, but success is certain if this device is worn persistently as I have described, and the reward to any woman in my judgment is worth the trouble.

To the reader of this chapter I have now an apology to make. These experiments at facial rejuvenation were not made upon my part with any idea of manufacturing a face mask for sale. They were taken up at the request of numerous correspondents who had obtained copies of my previous work upon Physical Rejuvenation. Accident placed me in possession of the old French pamphlet referred to. It seemed evident that the French beauty had found the real secret and solution of a

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problem which has worried womankind in all ages, and to satisfactorily answer those inquiries these experiments were conducted. At the date of this revised second edition of "Exercising in Bed" going to press, satisfactory arrangements for the general manufacture and sale of the metal face mask have not been completed, but I trust that by the time this book appears upon sale all details will be arranged and the circulars of the proposed manufacturers will appear with it, giving all further information which I am at present unable to furnish. To these prospective manufacturers all inquiries relating to this device will be referred.

The Duration of Human Life

In this century in the United States the average life of man is 40.85. This figure is arrived at by taking the expectation of life of the average normal person at the age of 22. This data has been kindly furnished me by the West Coast Life Insurance Company of San Francisco, and being from that source it is undoubtedly correct. But the extreme age to which the human body may attain, or has attained, is an unsettled question. Frequent accounts of men and women passing the century mark by very many years appear in print and are usually accepted without question, but when the statistics of the insurance companies are consulted upon this point a very significant fact is discovered: i. e., no insurance company has ever paid a loss upon the life of a human being who had lived to the age of 100 years. When it is considered how long the system of life insurance has existed, and taking into account the accurate data collected by these companies, the investigator

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becomes doubtful of centenarian records, and even still more skeptical as to the cases of the two Englishmen who have the credit of having attained the greatest ages recorded, Henry Jenkins, reputed to have died at the age of 169, and Thomas Parr ("old Parr"), 152 years. To any one interested to the extent of hunting up data regarding these cases, and I may add a number of others of lesser celebrity, I refer them to the valuable work of W. J. Thoms, entitled "Longevity of Man," published in London in 1873 by John Murray. The numerous statistics there presented bear evidence of long, careful and impartial investigation of a great many records. It contains verification of a very few instances of human beings who have lived a few years past 100, but the flat contradiction of numerous claims to much greater longevity.

The difficulty of either proving or disproving the date of a centenarian's birth is very great. Naturally the question at once arises, What is the evidence? The requisite would seem to be about as follows: 1st, baptismal certificates; 2d, tombstone inscriptions; 3d, the number of the centenarian's descendants;

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4th, the recollections of the centenarians, and 5th, the evidence of old people still living who knew him or her when they themselves were quite young. The certificate of baptism is generally considered to be the best evidence and beyond dispute, but this is almost always wanting or difficult of verification. Every individual who could have borne testimony has passed away, and nothing is left but to trust to his or her statements, with secondary and circumstantial evidence, and this is usually hearsay.

In another old book published in England in 1865, entitled "Man's Age in the World," by an Essex rector, the following records are given: Thomas Parr, A. D. 1635, age 152; Henry Jenkins, A. D. 1670, aged 169; Mary Billinge, A. D. 1863, aged 112, and the Countess of Desmond, 140 years. I will take the case of Mary Billinge first, reported to have reached the age of 112, quoting from a most thorough and exhaustive search published in the *London Times*, 1865. It was demonstrated beyond question that she was born November 6, 1772, and died in 1863, so was but 91 years old at her death. And in the cases of Thomas

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Parr and Henry Jenkins, after long and careful search, the verdict is that in both cases there is also an uncertainty of evidence. The statement is made that Henry Jenkins of Ellerton-upon-Swale, a laborer, was born in 1501 and died September 9, 1670. The mass of data is too long to print, but boiled down it amounts to this: It rests upon no better evidence than Jenkins's own statements, and I regret to say that is a rule which usually obtains in the majority of these reported instances of extreme longevity.

In the case of Thomas Parr, known all over England as "old Parr," he was reported to have been born at Winnington in the parish of Aldersbury, England, and died November 16, 1635, or having, if this record is correct, attained the age of 152 years. Now did he actually live to this age? The facts appear to show that it is largely hearsay based upon his own statements, and there is no verified data to substantiate this.

The same may be said of the Countess of Desmond, reputed to have reached the age of 140 years. The author of "Longevity of Man," after careful research, was unable to

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verify that record, but did find the date of her death to be A. D. 1604, and her probable age to be 100 years.

In the course of my readings upon this subject I find the following in the writings of a very distinguished investigator and authority upon this subject, Sir George Lewes of England. I quote his statement: "Limiting ourselves to the time since the Christian era, no person of royal or noble rank whose birth was recorded at the time of the occurrence reached the age of 100 years, and I am not aware that the modern peerage and baronetage books contain any such case resting upon authentic evidence." This does not prove that the duration of life in this apparently favored class is below the average. On the contrary. As an evidence, the Journal of the Statistical Society of London, under the date of March, 1863, pages 49 to 71, published a long article on the rate of mortality among the families of the English peerage during the nineteenth century. This data showed conclusively that the average mean duration of life among that class is throughout materially greater than that of the general English population; but

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even with the advantage of environment presumably favorable to the prolongation of life, not any member of the nobility had reached 100 years, and in the baronetage there is only one case.

Catherine, daughter of Sir John Eden, Bart., born February 10, 1771, died March 19, 1872; therefore she had lived 101 years. This is the only certain case in that class of favored English life reaching and passing the century mark. Referring again to the records of English life assurance, the policies paid upon the greatest ages are: The Pelican Life Assurance Company, one case at 97; Royal Exchange, one at 97; the Amicable, one at 97; Equitable, one at 95; Albion, one at 95; Rock, one at 94; Imperial, one at 94; Union, one at 94; Atlas, one at 92; Law, one at 92; Sun, one at 92; and London, one at 90. But there is no record of any policy having been paid upon any life at 100 years.

And I find after going over the data carefully that from 1670 to 1857 no solitary instance has occurred of a person who had insured his life attaining a greater age than 97 years. Another significant fact is devel-

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oped that most of the cases of reputed centenarians are inmates of some charitable institution or people of another race, not readily located, and lacking authentic credentials of their great age. These are a few of the stumbling blocks which the investigator in this field, endeavoring to prove that human beings can live beyond a hundred years, encounters. The question is one of interest to all, but when the mass of data which the writer has looked up for the past five years is summarized, this is the result: The human body does not retain the vital principle beyond 100 years, except in the very rarest cases, and then but for one or two years past the century limit. I wish to believe that man has lived to 152 and 169 years, as claimed by various writers who cite the cases of Thomas Parr and Henry Jenkins, but all data collected flatly contradicts those statements.

Believers in the literal truth of the Bible will probably instance the records of Methuselah, 969 years, Abraham, 175, and Isaac 180, as proving that man in biblical times lived to a much greater age than now. This is doubtful. Jesus, the son of Sirach, said, "The

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number of a man's days are at the most an hundred years," giving evidence of what was believed to be the limit of human life in his day. And in the words of the Psalmist, "The days of our age are three score years and ten, and though men be so strong that they come to four score years, yet is their strength then but labor and sorrow so soon passeth it away and we are gone."

Here we have unmistakable testimony as to what was then believed to be the average duration of human life, and what was true as to the number of our days upon the earth when those words were written the centuries which have since elapsed have not changed. While the general average of life, according to insurance tables, has been prolonged under favorable circumstances, three score years and ten is still the average, and 100 years the extreme age of man.

The claim that Methuselah lived to the age of 969 years is explainable only by the hypothesis that the method of reckoning time then was the same as that of all primitive people who reckon by moons, just as our Indians still do. Under this system Methuselah's age

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reduced to moons or lunar months would be one twelfth of 969, or say about 80 years, which is probably correct. The conditions of life in those days not being conducive to great age.

The next progressive stage in the marking of time was most probably the discovery of the equinoxes in spring and autumn, when day and night are exactly of the same length. This assumption being correct would give five months of thirty days each, and upon this basis of a year of 150 days, Abraham's 175 years would be cut down to 72, and Isaac's 180 to 74. In this way alone could these extraordinary ages be explained. No organic or structural change has taken place in the human body as shown in mummies and other anatomical relics of past centuries, which would account for the enormous difference in the duration of human life claimed in biblical times and as it now exists, and certainly the dietary and sanitary conditions, as well as our greater knowledge of hygienic laws, have made the possibilities for the prolongation of human life much more favorable in this age than they were when those biblical characters lived.

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The question naturally rises, is it possible to generally prolong the life of man, that is, to add one quarter or even a greater percentage of years, to its present apparent limitations? If the cause of physical deterioration can be removed or prevented this would seem possible. First, I will again present the cause of physical age as outlined in the opening chapters of this book. It is simply the clogging up of the arteries, the venous system, and their capillaries with worn-out cells and calcareous matter, i. e., the debris and ash resultant of the process of life. If this system of tubing, which is really the plumbing of the body, can be kept free from clogging matter, that body will remain young, and even after physical age has appeared, physical rejuvenation is possible even at threescore years and ten, as demonstrated in my own person. "For a man is surely as old only as his arteries," and my arteries and tissues are now young.

As the tubes of a boiler become clogged up and incapacitated by deposits of calcareous matter, so do the arteries and veins of the human body. Free them from those clogging deposits and it is possible to prolong life past

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that period which we now assume to be its limitation.

A correct system of diet will aid the digestive organs, and temperate habits in all directions are conducive to health and longevity, but still if there is a lack of general muscular activity by which the ashes of the system are expelled from the body, life cannot be materially prolonged.

The systematic alternate contraction and relaxation of the muscles, as described at length in this book, mechanically forces out this clogging matter into the avenues for its elimination from which it is expelled from the body by the natural processes of excretion, and in no other way can this be accomplished. This is not a matter of theory without proof, as I have demonstrated its truth by actual practice and success in the rejuvenation of my own body long before I had learned the reason why. But this system of expelling the clogging debris or ashes must be general and complete, for as well may you clean one part of a watch, leaving the rest dirty, and then expect that it will keep good time under those conditions, as to cleanse one half of the muscular

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system, leaving the others equally important clogged up. For that reason this method of exercising is designed for the purpose, and does exercise every large muscle of the body, and indirectly bringing all organs into activity, thereby insuring the greatest riches the world can offer—health.

By persistent practice upon the lines as described I have accomplished my physical rejuvenation at threescore years and ten, and by it, if no accident shall occur, I confidently expect to verify the truth of the statement of Jesus, the son of Sirach, “The number of a man’s days are at most an hundred years.” And why, if the process of repair and elimination can be kept upon an equilibrium, is it not possible to live to double that age? My answer is wholly illogical and without explanation: Because there seems to be an occult law preventing such extraordinary longevity of human life. There is no authentic record that it has ever occurred, and it does not seem that it can be. In the economy of the universe certain limitations of our knowledge and possibilities of life seem to be fixed, and beyond that limit we cannot pass. At least, my researches have led me to think so.

Chart of Exercises

The exercises I practice while lying in bed are here illustrated in the order in which they are performed. The number of muscular contractions and relaxations allotted to each movement will be found sufficient to commence with and familiarize you with the system. As the body gains strength, they may with advantage be increased, but it is not well to do so too rapidly, nor is it advisable to make the movements too quickly. A deliberate methodical rate which will not materially accelerate the pulse is much more effective than rapid movements which place a strain upon the heart. Every muscular contraction here illustrated and described has been tested by me during the past twenty years thousands of times. The "pull" of each muscle and its action upon neighboring or remote muscles has been carefully considered in every movement, using in my studies principally the standard works, Gray's Anatomy and Mar-

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shall's Anatomy for Artists, then proving the truth of the data there found by practicing upon my own person.

In the thirty exercises illustrated by the chart, every muscle of the body is brought into action without discomfort, under very comfortable conditions, and with slight exertion. I believe I have fully covered the ground and do not think any material improvement is possible along the lines as suggested. All parts of the body are in intimate relation with each other and any muscle contracted in exercise brings into action its immediate neighbors and sometimes muscles very remote from those placed in activity; therefore, while some of these exercises may seem like repetitions, there is always some slight change which I have found necessary to bring into activity some remote muscle.

I no longer use mechanical appliances, having found them not really necessary in this method. They appear in my first work upon this subject, and many people will still not believe that physical development can be obtained without mechanical aid. For this reason I present for your consideration these

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four simple devices. They are certainly effective but not absolutely necessary.

All of my exercises I practice as soon as I awake in the early morning, the physical system being then relaxed and receptive. You will at once find these muscular contractions and relaxations are an excellent toning-up process and preparation for your day's work, and later you will realize their efficiency in physical rejuvenation. If conditions with you do not permit practice in the early morning, try the movements when you retire at night, but not if you are tired.

You may differ with me in some things I have described, but I have this satisfaction, that sooner or later you will find I am right, as this system is the result of twenty years' constant practice. My mistakes have been legion, but my final success at physical rejuvenation is far greater than I ever expected, and I have no apologies for the system I now present to you, as it is a success.

While these exercises are designed and especially adapted for those advanced in years or of sedentary occupations,—either men or women,—if the movements are increased in

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number they form an excellent and easy system of training for young men, either athletes, runners or boxers, as endurance and elasticity of body can surely be obtained in this way, and it is an excellent preparation for the sharper work of regular training. I am not simply theorizing without demonstration, the evidence being the series of photographs of my physical condition at threescore years and ten, proving the truth of the efficacy of this lazy man's method of exercising. It is not probable that I shall ever give personal instructions in this matter, but I shall always be glad to hear of your success, and if you do not clearly understand my methods, write to me and I will try to help you out.

SANFORD BENNETT,
Care *Physical Culture Magazine*,
New York.

In Conclusion

I have now described, as fully and clearly as I am capable of doing, the methods by which I have accomplished my physical rejuvenation, and why such a condition as mine, at seventy, is possible by the system I practice. There is no question of my success, and I know the same satisfactory results are possible for any one who will follow my example,—but will you do so? The majority will say, “That man has some good ideas”, and add, “I feel that I do need a methodical system of exercise, and when I have time I may take this up”. You might as well say you have no time to eat or sleep. You can’t be healthy unless you exercise. Health should be your first consideration. Financial success and other things are of secondary importance; for with health, strength, and elasticity of body the chances of financial success are greatly increased. Without these attributes, the greatest financial success is of but little value.

How many of our brain workers—our business men and professional men—have sacrificed health and happiness by following the paradox, “I am

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too busy—I haven't time to take care of my health''? There is only one result to a life upon these lines,—an early breakdown is inevitably certain. It is true that many have accomplished great wealth in exchange for their health, but have spent that wealth in vainly endeavoring to regain their former, but now wasted, physical vigor.

I don't decry financial success. Wealth is a very good thing to have; but the greatest financial success will not compensate for ill health. Better stop now, before it is too late, and take the time to make yourself strong; for otherwise you may be forced to attend your own funeral, brought about prematurely by lack of muscular activity and other violations of the laws of Nature.

Another objection often raised is, "I am too old". To this I have already made my answer. If I, a chronic dyspeptic at fifty, with adverse hereditary and physical conditions and unfavorable environments, have been able, by the simple methods I have described, to build myself up and to acquire the strength, elasticity of body, and vital energy I now possess, but never had in the best days of my youth, then you, too, can surely

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have the same success. You are not too old. Try it. Commence now, and you will succeed.

“Too much trouble”—that is the objection of a lazy person. If, by the same exertions for one year, you could be assured that you would receive \$50,000, you would not think that too much trouble, but would esteem it the opportunity of your life. Yet the health, and improved physical condition, which would surely result from one year’s systematic and persistent practice of the methods I have described, could not be purchased for that or any other sum.

It is true that to be in the best physical condition does require unremitting attention; but the end is worth the means, for the reward is health, strength, elasticity of body, and longevity,—the real, the greatest, riches in the world. Just as engineers and expert machinists, employed to care for the intricate machinery of a great ocean steamship, are forever polishing up and looking after the various details of that machinery, that they may have its highest efficiency; so the complicated machinery of the human body must be assiduously and intelligently cared for, or it will surely deteriorate.

There is no “royal road to health”. It cannot

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be bought; if you would possess it, you must work for it.

But the way is easy, the work not hard. As you lie comfortably in bed to-morrow morning, commence the practice of any one of the muscular contractions and relaxations I have described, and, when you have learned that, take up the next. Finally you will have acquired the entire system, which you will find to be an easy, certain, and inexpensive method of acquiring health.

An illustrated chart accompanies this book. Hang it near your bed, where you can easily see the positions described in the exercise. You will find them easily learned. Commence tomorrow morning.

There is a very popular form of printed advice which you frequently find hanging over desks in business houses: "Do it Now".

